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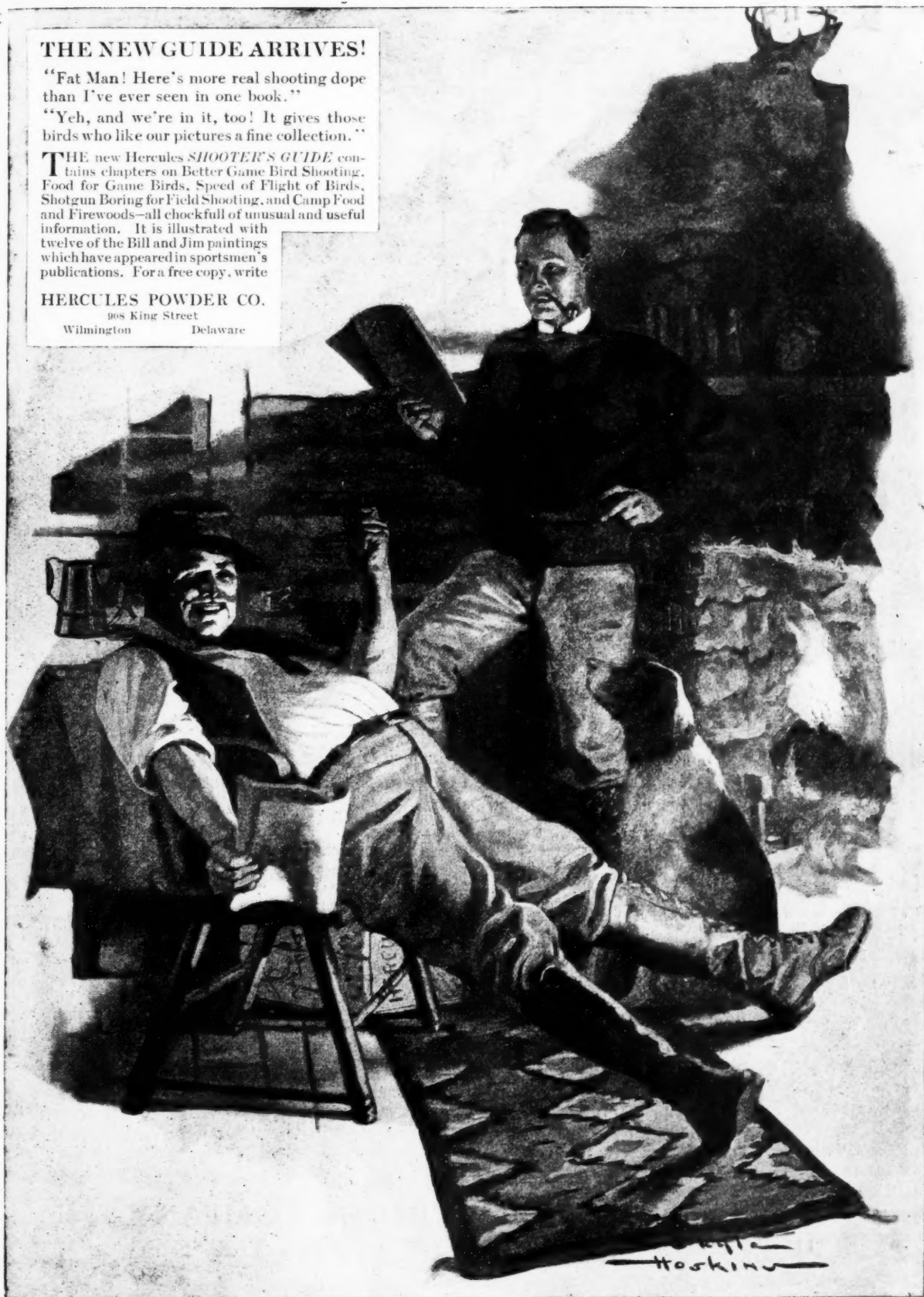
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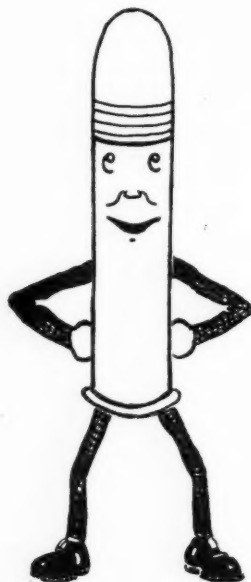
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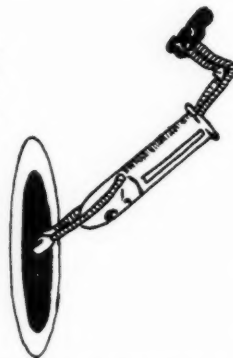
I hobnob with the foremost marksmen of six continents. They depend upon me. They trust me. I hit only where they aim.

I puncture the ten-ring upon the slightest provocation. I look well in black. When I get thru, a bull's-eye resembles a Swiss cheese.

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I have no regard for records. World's records are fragile in my hands. I break them easily. I take pleasure in doing so.

I am good — so they tell me.



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The AMERICAN RIFLEMAN

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Notes from Perry

By C. B. Lister

SOME of them admitted that they didn't like it — but they took it just the same. Which has reference to three days' dry practice before any one fired a shot in the School of Musketry, Camp Perry, Ohio, 1925. Probably 350 men, R. O. T. C., C. M. T. C., National Guardsmen and civilians were on hand for the first week's schooling and a good many of them thought that they knew how to shoot well enough to avoid the dry practice period. It is to be imagined however that the entire school now understands that the primary purpose of the School of Instruction is not only to teach a man to shoot but to teach him how to teach others how to shoot. After you have figured that out you'll get the point — the undercurrent of thought and planning that predominates in this year's instruction. To become a good shot is not too difficult and not very unusual. But to become a good instructor in the shooting art is quite a different matter. Which accounts for the three days' theory and dry practice during the first week's school. The second week's school being more limited in time will start with two days' theory and dry practice.

"A real school," one has heard frequently around the camp and a real school it seems to be.

Present indications are that about 95 full National Match Teams will be in with an additional dozen police teams and enough unattached competitors to bring the total number of shooters up to over the 1700 mark.

The old timers will find but few exterior changes on the range this year. The arrangement of the camp is about the same. All the old fixtures are here with but two noticeable additions. These are the Running Deer range and the greatly improved small bore facilities. Nor is it fair to call the Running Deer "noticeable" addition. Far from it. It is a noteworthy addition and a fine job with the deer emerging from one grove of trees, passing across an open space of the required width, and diving out of sight into another grove, but no range which is even farther away from the center of things than the International can well be referred to as noticeable. Indeed rumor has it that one of the enterprising Ohio inter-urban bus lines will shortly run a connecting line from the Hostess House to the Running Deer range, busses leaving every hour on the hour, lunches to be obtained at the Running Deer range. It is easy to understand of course that there is little space on the right of the range for this Running Deer layout but it is

most unfortunate that it had to be installed in its present out of the way location considerably beyond the old orchard sheltering the former small bore and present International firing point.

The small borers have a greatly improved lay-out this year. The trolley system is continued but an improved carriage, carrier, and frame has been developed and installed. There are forty firing points on the small bore range this year and the trolleys will not have to be run in during the progress of any stage, sufficient space having been provided on the frames for one sighting target and two record targets for each of the forty firers. All tracks are 100 yards in length so that the entire range may be thrown open for either 100 yard or 50 yard firing when desirable. As has been customary firing at 150, 175, and 200 yards will be done on the regular 200 yard range.

Speaking of small borers there has been an advance guard of this clan in camp since it opened, firing the W. J. R. C. events. From 8 years old goin' on 9 up to 17 or 18 these youngsters are turning in some remarkably fine performances in shoulder to shoulder competition. There are about seventy of them here, probably two-thirds boys and one-third girls. This year for the first time they have come in in small groups with an instructor or chaperone of their own. The percentage of high grade target rifles has noticeably increased and there is some mighty good material in the making here for the civilian clubs of tomorrow.

The Delaware and Hudson R. R. Police are taking full advantage of the opportunity afforded by the School and have sent down Inspector Masko, Lieutenant Brown, Sergeants Rasmussen, Pierson, and Stone and Patrolman Hanscom to take the entire course. In addition the regular D. & H. Police Team in charge of Chief of Police Jens K. Jensen will be in before long. Pittsburgh too we understand is sending a rifle team as well as a pistol team. Baltimore will be presented by two full teams. Seattle, Portland, Buffalo, Toledo will be here. Chicago, the Pennsylvania State Police and the New York State Police are uncertain probabilities. There is every indication that the Police matches this year will exceed in size, interest, and keenness of competition the hard fought events of last year.

We are to have a real Palma again this year. The Canadians have sent down a team to fire the second of the "Palmer" the first half of which was lost over the Rockcliffe ranges last year while the Cubans have sent a team to fire (*Concluded on page 23*)

High Power vs. Low Power Rifles

By F. J. Morse

THE question is often asked by sportsmen, What kind of a rifle should I buy for American game shooting? On the face of it this seems a very simple question to answer and some years ago the writer would have thought that with the inquiry of just the location it was intended for use the question could have been readily answered but with the advent of the almost infinite range of high velocity rifles of various calibers, ranges, and shocking powers the question becomes very much more complicated.

Only a few years ago when a sportsman's arsenal included a .38-55 and a .45-70 he was fully equipped for any woods shooting in North America. The .38 fully met all requirements for deer and other smaller game and the .45 was a most convincing argument with moose, bear, and other large denizens of the wilds. The writer had these two guns in his outfit and felt sure he was equipped for anything but when the 8 and 9 m.m. high power German guns and other high velocity American guns came onto the market their flat trajectory long range, together with the great shocking powers and reduced weight of gun were considerations not readily passed over by the progressive sportsman. These inducements proved too much for the writer's conservatism and the result was the purchase of a 9 m.m. Mauser.

On the target and from every angle that could be figured this new shooting iron had the old charcoal burner scrapped and it was with no little impatience that the purchaser waited for the calendar to say that it was time to hike for the deep timber.

The first morning out with this new "instant death" netted only a fleeting glimpse of a flag as the thick woods swallowed up its owner, but the second morning while carefully working through promising territory a most beautiful pair of horns and a buck's face caught my eye watching me from a thick growth of small man high trees, about 50 yds. distant. The 9 drifted into position without conscious effort but just as the sights swung into line with a snort of defiance the head disappeared to one side but as a fleeting glimpse of the fore shoulder slid in front of the head the 9 barked. Imagine the writer's surprise when the derisive waving of the flag in the fast increasing distance greeted his eye and was lost in the thicket before the futile reaching for the non-existing ejecting lever was stopped. Now what was said about bolt actions and high power guns wouldn't sound pretty in polite company. After cooling off a bit the question was what became of that bullet. I have the misfortune of always wanting to know why so I went back and after a bit found the empty shell, located my position and followed up the line of bullet flight. A couple of clipped twigs demonstrated that my aim was true but yet

the buck wasn't there. Why he wasn't was a mystery. Well as the saying is I "spat" on my hands and said try it on me again. Two or three more mornings' tramping was necessary before I caught a big doe leisurely crossing a small opening about 80 yards away that dropped in her tracks at the crack of the 9, as pretty as anything you ever saw. High power guns immediately took a jump to 150 then and there and the final obsequies to the old charcoal eaters was started.

The next day while coming in from an unsuccessful morning's hunt an old cock partridge walked out about 20 yards in front and perching himself on an old log with ruffled feathers and fierce mein disputed the right of way. Looking him over he seemed to look more like a good dinner than anything else, so pulling the set trigger to a click careful sight was taken just below his eye and at the crack of the Dutchman Mr. Cock went end-over-end. When picked up there was not much to show for a head. My hat was raised to the "instant death" and I was compelled to acknowledge that she was there with the goods at close range as well as long.

While dressing that bird a little later a long gash, cut clean to the breast bone, was found extending diagonally across the breast. On showing this to my chum and the guide they both said your bullet hit a twig which took the jacket and the jacket did the trick. I immediately got right up on my hind legs and asked: "Do you expect me to believe that a small twig will strip that baby? Forget it! It is absolutely impossible." Nothing, however, would shake their conviction so to settle the matter I went back up the wood road where the slaughter occurred and as sure as life found a twig about the size of a lead pencil slipped off a few feet my side of the log where the bird was shot. When I saw that interrogative points commenced to stick out all over me and I commenced to see light. Not to jump at any false conclusions, every opportunity was seized to shoot through brush and twigs at game during the remaining weeks of that year's stay in the woods and while some excellent kills were made some most unaccountable misses were also recorded.

With the old charcoal burners wherever she was pointed, it took something more than small twigs or branches to turn the old lead slug much from her path and if the sights were lined up on Mr. Buck when the "old girl" roared he was a sore deer, twigs or no twigs.

There is another feature to high velocity rifles that may not have impressed itself upon all sportsmen: that is the less of shocking effect resulting from long range.

Shortly after the 250-3000 was placed upon the market the writer in looking them over was so favorably impressed that one was pur-

chased for an Easter hunting trip after caribou. Trials on the range showed it in accuracy, ease of manipulation, and feel, fully up to the Savage standard and when you have said that you have paid a high compliment to a rifle. Tests with this gun on 100, 200, 300, and 500 yards showed possibles with most excellent and close groups. With the glowing reports of its great shocking power and its fine accuracy, and very flat trajectory, the writer felt like shouting "Eureka" from the housetops.

It took several days' tramping of the Newfoundland marshes and planes before a head which met the writer's ideals was finally discovered, early one morning, in company with two females on an opposite side of an open bog at a long range. As the wind was not exactly favorable and as the group had evidently heard or scented me it did not seem wise to attempt a closer shot so carefully changing my position behind a bush from kneeling to sitting, a careful aim was taken, holding high to allow for estimated distance and the trigger squeezed. At the crack of the little speedster there was great commotion among the caribou but the bull did not drop, so while they were trying to locate the source of trouble the second pill was sent across with the result of wafting the bunch over the ridge out of sight with the bull leading. The nitro fumes had not commenced to clear from around my head before I heard my chum's old 45-70 roar from the direction they had taken, and perhaps that added to my cheerful frame of mind as I had all the way into the woods been telling him how much I thought of a good man that would pack a back number cannon when neat chain lightning in small doses would do the work so much better. Only one shot sounded and knowing as I did, my chum's ability with the charcoal burner, it was quite evident that I was in for a "jollyng."

Well, I walked up to my medicine as cheerfully as one goes to the dentist with an ulcerated tooth for I felt a good deal as the coon must have when caught with a chicken under his coat. "Some chain lightning that plaything you are carrying, ha! ha! ha!" was the greeting I received as I came up and found my chum standing over my bull. One 405 from the old 45 had piled Mr. Bull up in a heap. I was in about the same fix as the boy that fell in the brook and I nearly ruined my laughing organs that afternoon and evening trying to discourage derisive remarks.

A post mortem showed my two bullet holes about three inches apart clear through the body as clean all the way through as though done with a sharp steel rod. He would have been a "dead one" as sure as fate but I shouldn't have had the pleasure of carrying home that beautiful (Continued on page 26)

Pressures

By E. Naramore

WHEN our aboriginal antecedents felt the terpsichorian urge and indulged in their favorite sport of trying to make the world safe for the Indians, American Riflemen were not much given to thinking about the pressures developed in their gun barrels. They dumped various amounts of powder down their trusty, and as often rusty, barrels, and held the charges temporarily in place with leaden slugs. Those were the happy days when every shooter was a re-loader. At least, he was until he got transfixed with an arrow or slammed over the head with a stone club but the only pressures of interest were those delivered via the butt-plate. Breech loaders didn't change things until smokeless powder of the dense variety came along. Up to that time reloading was a pretty well established custom because it was cheap, safe and easy and shooters had to concern themselves only with exterior ballistics, if any. When smokeless powder started breech blocks moving rearwards farther than their design called for and sent other parts of the gun traveling in a most indiscriminate manner, shooters gave a passing thought to chamber pressures. They seem to have decided collectively that this new powder kicked up too much fuss to monkey with and preferred to let the ammunition companies worry over the pressures. About the same time reloading started to decline and the factories increased their plants and dividends.

Ammunition has taken big strides in velocity and power during the past few years but the limiting factor in this direction is chamber pressure. The method used in determining pressures in this country has its shortcomings but it seems to be accomplishing its purpose. Of course the object in taking pressures is to determine if the load tested will be safe in the arms it is intended for. The virtue of our system of taking pressures is evidenced by the fact that in the very rare instances when good guns are damaged by factory ammunition, the cause can be traced to a malfunction of loading rather than to any misinformation on pressures. It is unfortunate that blown up guns are sometimes returned to the manufacturers under questionable circumstances. Mr. Remington will open up his morning mail and find a letter something like this:

Dere mr. Remington*

you maik lowzy amunishin. i got a box of your 32 bulits and the 1st one went al rite but the 2-3-4 & 5 didnt hit eny thing and after that the dam gun woodent wirk eny moar. i am sending it to you to give the look over & think you shud by me a noo 1 and giv me for 32 bulits for the wuns that didnt hit eny thing.

"Harry Doe"

Mr. Remington gets the gun express charges collect and on opening up the barrel finds

four Ideal bullets and traces of a powder that he don't use in loading that caliber. But to get on with pressures.

About a year and a half ago someone, whose name I don't remember, hand loaded

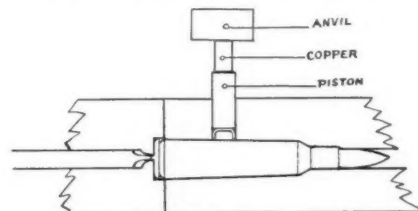


Fig. 1.

some .30 Springfield cartridges and sent them to several different laboratories to have the pressures taken. When the returns were all in there was an extreme difference in figures

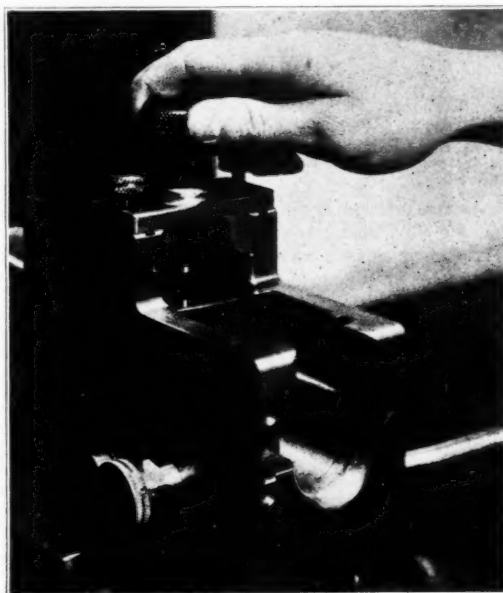


Figure 2. This illustration in conjunction with sketch 1 shown above gives a very clear idea of the basic principles on which a pressure gun works. The apparatus is also illustrated from another angle by Figure 3.

of about ten thousand pounds per square inch. As I recall his comments on pressure and pressure guns were not highly complimentary. I had forgotten all about this until Chauncey Thomas referred to it under the heading of "Krag and Six Guns" in the March 15th number of THE AMERICAN RIFLEMAN. At first glance 10,000 lbs. variation between cartridges loaded exactly alike seems like a whole lot but under the circumstances it isn't as bad as it looks.

Crusher gauge, pressure gauge and pressure gun are names given in polite society, to the apparatus used in determining the pressures developed by small arms ammunition. There

are other names but these vary with disposition of the operator. The species used in taking pressures in cannon are known as crusher or pressure gauges except when they get shot out of the gun and lost but as most of us use cannon rather infrequently we will leave this member of the family out of the discussion. It is possible to determine pressures by mathematical calculation—after a fashion—but the result should be regarded with suspicion. This paper will only deal with mechanical methods and those who like figures are referred to the "Corset and Underwear Manufacturers Review."

Figure 1 is a diagram showing the general principle on which a pressure gun works. There is a hole drilled through the top of the barrel into the chamber to which is fitted a piston. This piston is fitted very carefully so as to prevent the escape of gas past it. In addition to this a small copper cup is placed under the piston with a gob of grease and this acts as a gas check. The copper crusher or "copper" is a small cylinder of pure copper of known length. To determine the pressure developed by a cartridge a copper is placed on end on top of the piston and the anvil is lowered on top of the copper so the copper is held firmly but without compression between the piston and the anvil. As the lower end of the piston forms a movable portion of the chamber wall it is forced upwards by the expansion of the powder gas and compresses the copper, decreasing its length. The copper is then removed and measured with a micrometer caliper and the amount of decrease in its length is an indication of the pressure exerted on it or in other words, the chamber pressure. Naturally a pressure of 50,000 lbs., will compress a copper more than one of 25,000 lbs. Figs. 2, 3, and 6 show pressure guns with crusher cylinders in place.

Now that the general principle is understood we can give some consideration to the variations that occur in the elements involved. First there are the coppers. These are cut from rods of pure copper very carefully rolled and annealed to make them uniform throughout. As a matter of fact, it is practically impossible to get all the rods of the same lot exactly alike or for that matter, to be sure that each rod will be of the same structure throughout its entire length. But every effort is made to get them homogeneous. It will be readily understood that if a hard copper and a soft one are used in testing two cartridges of the same loading, the soft one will be compressed the most and a different pressure will be recorded for each cartridge.

The manufacturer of coppers tests each lot and prepares a tarage table or chart upon

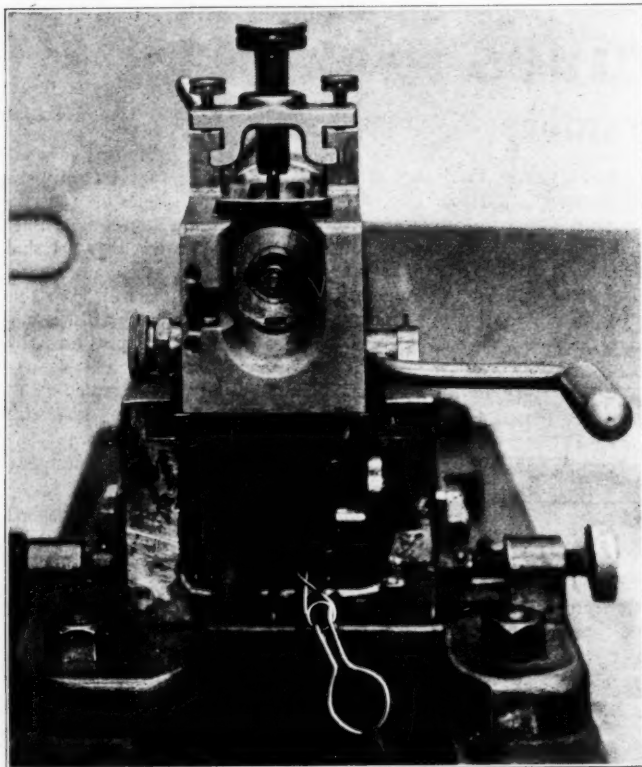


Figure 3. A rear view of the pressure gun shown in Figure 2. Notice that the cartridge is partly inserted in the chamber, the breech block not having been dropped in place. Most pressure guns are mounted so they can be operated from the conventional type of machine rest.

which the dimensions representing various pressures are given. In preparing these tables a large number of coppers are subjected to known pressures in a static testing machine. Static machines are capable of applying pressure to the coppers in much the same manner as actually piling so much weight onto them. "Static," in this case means stationary and not an alibi for a bum radio set. A number of coppers are subjected to each pressure but owing to the variation in the coppers they will not all be compressed equally and the mean dimension is used in making up the table.

Static testing machines apply their pressure slowly. The piston in a pressure gun acts very quickly, and is believed to attain a considerable velocity for a short interval of time, very much like a projectile except that it has to compress copper instead of air. We all know that copper is somewhat more dense than air so the "flight" of the piston is quickly arrested. Owing to the short time in which it must perform its work it is believed that it does not compress the copper as much as the same amount of pressure would if applied slowly. Therefore the figure obtained with a pressure gun is probably less than the pressure actually developed in the chamber. Another factor that aids this theory is that the pressure does not act directly on the copper. A certain amount of energy is used in lifting the piston and in overcoming the friction between it and its housing. An effort is made to overcome this by making pistons as light as is consistent with the work they have to

perform. Their travel is also limited, in some cases, by giving coppers a certain amount of initial compression, that is, by partially compressing them before they are used. Suppose we are testing a load that is expected to give a pressure of about 50,000 lbs., per square inch. We compress a copper, by machine, to 48,000 lbs. before we put it in the pressure gun. When the gun is fired the piston does not move until the pressure reaches about 48,000 lbs., and has only a short distance to travel to complete the compression of the copper. If it were possible to fire the same cartridge with the same copper uncompressed, the copper would not be compressed as much due to the longer travel of the piston and the

short interval of time it has to do its traveling in. Some loading companies use uncompressed coppers, others use different amounts of initial compression. As a rule, the advantages resulting from initial compression decrease as the chamber pressure decreases. In testing some of the smaller revolver cartridges

coppers are used uncompressed as the pressures are so low that the piston doesn't have very much travel anyway. When we get down to the rim fire family, lead crusher cylinders are used as low pressures will not overcome the viscosity of copper cylinders as uniformly as the softer lead ones. Lead crusher cylinders are also used in taking pressures of shot shells.

There is no uniformity among the powder and loading companies as to the amount of initial compression given cylinders and therefore no basis for comparison between their figures. Coppers are sometimes compressed initially on hand machines that are a combination screw press and scale. If, for instance, coppers are to be initially compressed to 45,000 lbs., they are put one at a time on the press part of the machine with the top of the cylinder against an anvil that corresponds to the platform of the scale. The weights are set on the beam at 45,000 lbs., and the crank, actuating the press, is rotated until sufficient pressure is exerted on the anvil to balance the beam. The press is a pretty powerful affair and a very little movement of the crank will exert a considerable amount of pressure. It is quite a trick to bring the pressure to the desired point and stop there and the most skilful operators will get some variation. This trick looks easy but the best way I know of to prove that it isn't is to watch the operator and then bet that you can compress one to within one hundred pounds of the desired point. Then turn the crank until the beam just leaves its resting point and stop short. All that is left to do is measure the copper and watch your money disappear. You can get a good idea of the power exerted by a screw press by tightening a bench vise up on your finger as tight as you can stand it and then twist just a wee bit more. The same effect can be had by sticking a finger in the family meat chopper.

Figure 4. A machine designed especially for use in the Du Pont Ballistic Laboratories for the initial compression of pressure coppers.

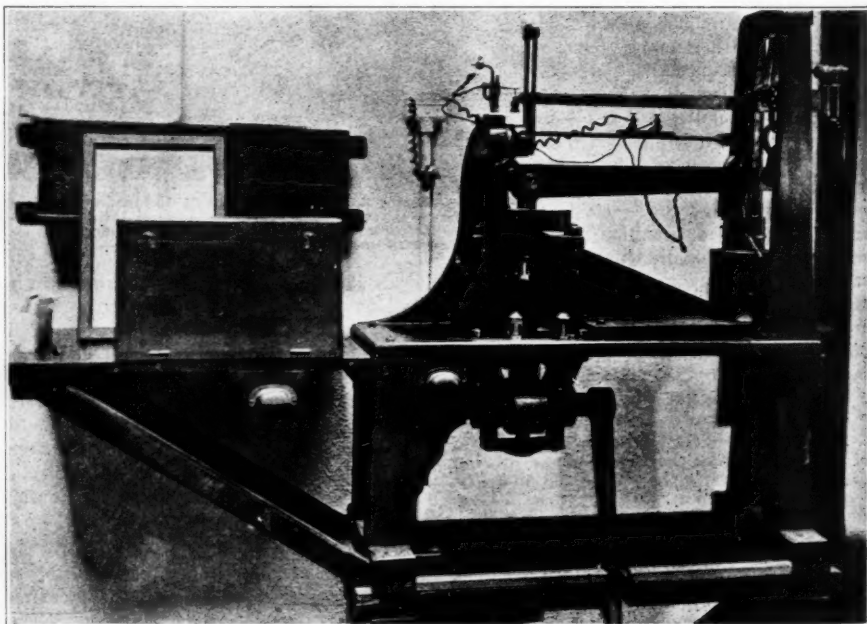


Figure 4 is a photograph of a machine for compressing coppers but is slightly different in operation than the one described above. It is undoubtedly as tricky.

Pressure guns are not all alike either in design or action. A new gun is likely to be somewhat stiffer in its action than one that has had considerable use. This is due to wear and erosion of the piston and eventually causes the gun to be discarded. The matter of design involves the size, weight and location of the piston and is influenced by the cartridge the gun is made for. I believe the general rule is that for cartridges having long shells the piston is located back of the bullet and for the shorter shells, just in front of the shell. This holds good with two of the larger ammunition companies at least, although they differ on the exact distance that the pistons are forward or back of the mouth of the shell. As you will note from the accompanying photographs, these guns are of special design throughout but it is possible to convert some rifles into pressure guns. At Aberdeen Proving Ground they use converted National Match Springfields. These have a heavy steel yoke built over them to support the anvil with its adjusting screw and give one the impression of a horse hitched to a Russian sleigh with one of those big inverted U shaped yokes over it. All that is lacking to make the picture complete is the pack of wolves.

Figure 5 shows a Springfield converted to a pressure gun. Note how some heartless wretch has disfigured it. Figs. 6 and 7 are special types of guns with pistons located at intervals along the barrels. As the projectile passes each piston the pressure at that point is recorded.

We have seen that there are a good many variables in connection with taking pressures, some small and some not so small. The prin-



Figure 5. A view taken at the Du Pont Ballistic Station showing both velocity and pressure rifles in position on the rests. The gun on the left is a regulation Springfield rifle clamped in the rest for the taking of velocity. The gun on the right is a Springfield rifle modified over into a pressure gun. Notice the cord tied to the trigger. The gun is ALWAYS fired with the door shut and the string pulled from the ADJOINING room. The term "Safety First" was invented in a ballistic laboratory.

cipal thing to remember is that most of these variations tend to indicate pressures *less* than actually occur, therefore it is customary to fire ten or more cartridges of the same load-

ing and to take the mean of the figures obtained as the pressure for that loading with due regard for the *maximum* figure obtained. Nobody cares two hoots and a holler if one or two cartridges do show a much lower pressure than the rest. If the maximum is within safety limits and the ammunition is accurate why worry about anything else?

When it comes to variations the best ammunition ever made is not above suspicion and to send several cartridges to different laboratories for test would not be as satisfactory as shooting them all in the same gun. Suppose one fellow should get the minimum pressure cartridge in a new gun with an uncompressed copper and another fellow got the maximum cartridge and fired it in an old gun with a soft copper initially compressed. My guess is that there would be more than 10,000 lbs. difference in the resulting figures.

Nothing has been said about temperature and this has a very marked effect on pressure and velocity. All other things being equal the higher the temperature of the powder at the time of firing the higher the pressure. I wonder if all Mr. What's-his-name's cartridges were fired at the same temperature and if not whether any corrections for temperature were applied to the results obtained.

The May 1st issue of THE AMERICAN RIFLEMAN contains a list of the different lots of the ammunition submitted for the National and International Match tests at Aberdeen Proving Ground. (Concluded on page 25.)

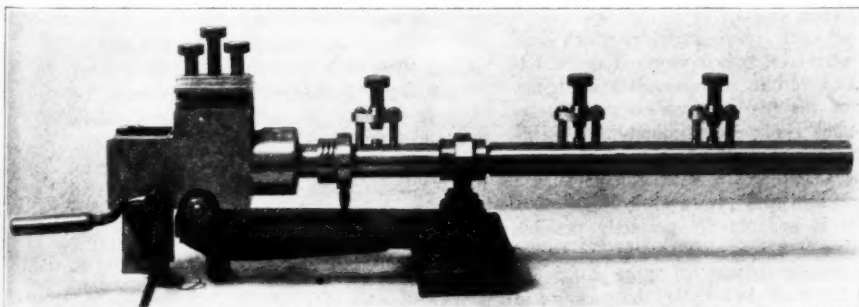
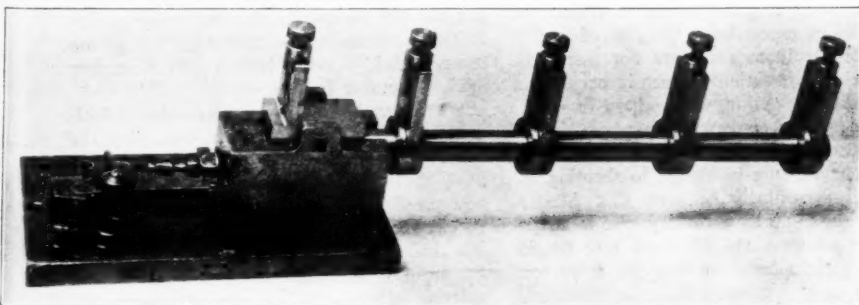


Figure 6 (above) and Figure 7 (below) show special types of pressure guns designed for the taking of pressures at intervals along the barrel. This type has become common since the introduction and general use of progressive burning powders.



Trial of the New "Super Thirty" Rifle

From the London "Field"

IN spite of the large and ever increasing number of British sporting rifle cartridges, a test of a new rifle and cartridge can never be lacking in interest; but our trial of Messrs. Holland and Holland's new .375-.300 rifle raises several points which are of more than ordinary importance. In this instance the new cartridge does not mean a new brass case, for Messrs. Holland and Holland have taken their well-known .375 Magnum case and necked it down to take the standard .300 Springfield bullet. The combination thus achieved is undoubtedly a very wise one and possesses several merits which are of the utmost importance to both sportsmen and rifle-makers, among which are freedom from metallic fouling and a comparatively low chamber pressure, both of which points we will deal with later.

The first question which naturally arises is this. In view of the numerous existing sporting cartridges on the market, many of them of undoubted excellence, is any firm justified in adding to their number? We have no hesitation in answering in the affirmative. Unless such additions are made, improvement is impossible. Further there can be no doubt that there is a decided demand for a rifle which is not unduly heavy in itself and which fires a bullet of 150 grains with a muzzle velocity of at least 3,000 f.s. The advantages of such a combination of bullet weight and velocity are especially great in very open country where long shots may be inevitable, although for closer work a bullet of over 200 grains and starting with a more moderate velocity would be more satisfactory. At the present time there is no British weapon which exactly fulfils these conditions. The .280 and the .333-.280 both fire 140-grain bullets with a M. V. of 3,000 f.s., but they lack the heavier bullet. In fact the .318 seems the most nearly to fill the bill with its 180 and 250-grain bullets propelled at muzzle velocities of 2,000 f.s. and 2,340 f.s. respectively. But 2,700 f.s. is not the same as 3,000 f.s., and there can be no denying the magic attraction which a velocity of 3,000 f.s. or over has for sportsmen. Further our ammunition makers have for some years past loaded this cartridge (180-grain bullet and 2,00 f.s.) so irregularly that neither the makers of the rifle nor its users were given a fair chance. We recently pointed out that Messrs. Nobels have declared that they have overcome the difficulties and that they assert that they will in the future be able to supply this cartridge loaded to standard ballistics. But at the same time there is no doubt that the attainment of a velocity of

2,000 f.s. from such a comparatively small cartridge case as the .318 is working near the maximum permissible limit for pressure, and any increase on this velocity would certainly be impractical.

Consequently it will be seen that no existing British cartridge fulfils the specifications which we have suggested. But the American .300 Springfield undoubtedly goes some way towards so doing. There are three standard bullets for this cartridge of 150, 180 and 220 grains, and the muzzle velocities of these bullets are 2,700, 2,500 and 2,200 f.s. respectively. We are aware that considerably

and will, therefore, yield decidedly lower pressures for the same muzzle velocities.

But there is another aspect of this combination. Why use American bullets? The answer is, in order to eliminate metallic fouling. Metallic fouling is the curse of the Magnum small bore rifle and the bugbear both of the sportsman and rifle-maker. In the past few years it has been proved, first in America and then in this country, that the substitution of a kind of gilding metal for nickel or steel in the jackets of rifle bullets reduced metallic fouling to a negligible quantity. In America these jackets are known as "Lubaloy," and in this country as

"Nobeloy," but their composition is very similar. In 1923 Messrs. Nobels made .303 Magnum match rifle ammunition which Messrs. jacketed with "Nobeloy." Last year similar bullets were used for the same purpose, and further the .240 ammunition which Messrs. Nobels specially made for the Running Deer Competitions in the Olympic Games, and which they most generously gave to the competitors free of charge, was all loaded with bullets

with "Nobeloy" envelopes. The experience gained since 1923 has proved beyond all shadow of doubt that "Nobeloy" envelopes entirely eliminate metallic fouling. Metallic fouling is the curse of the sportsman. Why, then, are not all British sporting bullets made with "Nobeloy" envelopes? We are bound to confess that we believe the reason is lack of competition. It is true that tests must be made in order to determine the correct thickness and proper hardness of the jacket, but the match-riflemen have carried out many tests, and we feel certain that were there only two great firms of cartridge manufacturers in competition one with the other, one at any rate would have continued what tests were necessary and placed on the market every standard British sporting rifle cartridge loaded with the bullets with these non-fouling envelopes. The firm which did this would undoubtedly get full custom of the rifle-makers and sportsmen. But there is no competition and consequently British sportsmen are compelled to go on using nickel jacketed bullets and struggling against metallic fouling.

We congratulate Messrs. Holland and Holland on striking out on their own. By the adoption of American "Lubaloy" bullets they have shown that if they cannot obtain the best possible bullets in this country they will go elsewhere. And we wish that every other gun and rifle-maker could adopt a similar course of action until nickel jacketed British sporting bullets were (Concluded on page 26)

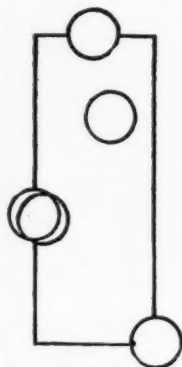


Fig. 1.

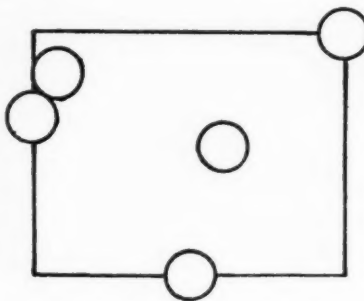


Fig. 2.

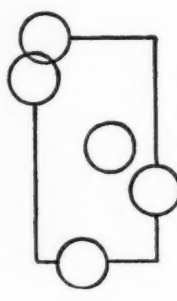


Fig. 3.

higher muzzle velocities have been claimed by different American firms for these bullets, but tests made in this country have hitherto been unable to substantiate these claims, and we think that the figures we have quoted may be taken as being correct.

Here, evidently, was a cartridge which gave just the weights of bullets required and which only needed certain improvements in design to produce the necessary velocity. Messrs. Holland and Holland accordingly set themselves the task of establishing these improvements so as to obtain a very high muzzle velocity and an easy pressure.

Now it is undoubtedly perfectly possible to load the .300 Springfield case so as to develop a muzzle velocity of quite 3,000 f.s. with the 150-grain bullet, but the pressure in this case would certainly be over twenty-one tons, and this is beyond the limit which we like to see retained, in sporting cartridges. High pressures invariably lead to trouble in sporting rifles, especially in the case of double rifles. If the brass cases are not just right difficulties in extraction frequently occur, and further there is nothing in hand, so to speak, to allow for any increases in pressure due to temperature or any of the other causes of an increase in pressure incidental to shooting.

It will accordingly be seen that Messrs. Holland and Holland were very wise in adapting their existing .375 Magnum case to the .300 Springfield bullet as this case is of considerably greater capacity than the Springfield

Masque Maquedoux

By Louis V. Manning

[Enter GUNBUG, a cloven-hoofed, horned and tailed figure garbed in red, with a "rifle over each shoulder and two huge pistols incapable of being concealed hanging at his waist."

GUNBUG. [Loquitor]

Dear friends, I trust you're unafraid
That you have found me thus arrayed:
A-walking Broadway I would go
And Maquedoux would dress me so.
Sweet friends, with simple, guileless tact,
He wrought the Anti-Pistol Act¹—
An Act, it seems, is just a trail
Designed to lead you into jail—
Ah, friends, I fear you do not heed
The men that whimper, pray and plead
Behind the scenes of Government,
All relative to Armament.
Come, follow me; the night is young,
And Sammy Colt will soon be hung.

[Opens curtains and stands aside in front of one. Scene: a garden with trees and bushes, equipped with all the properties of a court of law, containing one human figure: Magistrate Maquedoux disguised as Justice.

The MAGISTRATE. [Ponderously]

I am the author of the Anti-pistol Act.
It is an illusion without a basic fact
That murders are committed by a human bent to crime:
There's no such case on record—it's a pistol every time.

GUNBUG. Before some evil genius made that devilish machine,
On a million million corpses, not a powder mark was seen.

MAGISTRATE. [Calls] What ho! I'MRIGHT! Attend!

[Enter I'MRIGHT, masquerading as a policeman: at his belt is suspended a charged bottle of seltzer. Symbology: uselessness of a revolver as an arm of law and order.

I'MRIGHT. Your Honour?

MAGISTRATE. Good, gentle lambkin, hast thou found
What obscure, occult spell profound
The Arm'rer uses in his dive,
Whereby he goes and comes, alive?

[Proceedings interrupted by loud cries off-stage: "Hey, youse: come open dis gate."

MAGISTRATE. Dear friend, the gate.

[I'MRIGHT disappears: returns shortly leading a party of FOOT-PADS.

1st FOOT-PAD. Which o' youse guys sells de poimits?

MAGISTRATE. Of permits there are divers classes:
To peddle fruit, to sell molasses:
But from your honest, upright faces,
Your noble bearings, manly graces,
I know you've not been long deciding
That you'll all be law-abiding.
I'MRIGHT, Attend!

[Business of issuing permits.]

1st FOOT-PAD. 'Ats a stuff; here's my century.

2nd FOOT-PAD. Mine too; 50 more fer a box a shells.

3rd FOOT-PAD. Great law, JUDGE: now a guy wot's got no
business wit' no gat aint got no gat no more.

1. The Copeland Bill, taxing concealable weapons \$100; and their cartridges \$1 apiece.

1st FOOT-PAD. Sure dat money's good: I just took it away
from a banker.

4th FOOT-PAD. Don't take no lip offen him, RED: any old time
a cheap HARNES-BULL tink he can get away wid sumpin when
a 'Merican citizen is payin' his taxes—

GUNBUG. [To audience]

Though hearts to murder are inclined—
Now, really, friends, you shouldn't mind
A little thing like murder done—
The weapon is a legal one.

[Party of FOOT-PADS receives permits and departs stinging.]

I'MRIGHT. Hear how those parting voices raise

In songs of gladness, hymns of praise!
Where, indeed, in any land
Are folks as happy as that band?
O righteous JUDGE, the years will pass:
We, too, shall lie beneath the grass:
But think! The noble work we've done
Shall reap forever, sun to sun.
The STATE shall count her murdered dead,
And then collect, one buck per head!

GUNBUG. Good friends, we'll turn another page

And peer into this armless age:
For know that still the pistol's borne
And note the men by whom it's worn.

[Enter POLICE FORCE left, POLICE FORCE right: indicate one another across the stage.

BOTH FORCES. 'Twas dark that California night:

At Pebble Beach the sand was white;
And from the shadows, black and vague,
That bunch came creeping like a plague.
We heard their ominous, evil hum,
And thought, of course, of smuggled rum;
In righteous and indignant ire,
We drew our guns, and opened fire.

[BOTH FORCES take seats in the court. Enter SQUAD of POLICE from Melrose Station, Oakland.

The SQUAD. Who said we do not need our guns?

We need them on our daily runs;
For who but us that would defend
The WAGON, if the DRYS descend?
We use it to deliver booze:
Our word! And would you have us lose
THE CITY'S WAGON, strong and great,
By pimply PROH's confiscate?

[SQUAD takes seats. Enter delegation of defaulting POSTMASTERS, kindly loaned for the occasion by Leavenworth prison: they execute a Virginia Reel as their leader, EX-INSPECTOR FAHY, convicted of armed robbery of the mails, addresses audience.

FAHY. Of course, dear friends, you've heard of me,

A master-mind at mystery—
And, friends, of course you'll understand
I'd always pistols close at hand:
Were't otherwise, who'd keep the stamps
From being swiped by obscure tramps?
Ods wounds, dear friends! Were I to fail,
Some other crook would rob the mail.

[POSTMASTERS take seats: enter SPECIAL POLICEMAN]

SPECIAL POLICEMAN. My gun's exempt, dear folks, because
I'm hired to watch the NATION's laws:

I'm guarding Gladys Vand der Rocks—
A stranger, she, to cotton socks—
That million-dollar girl of yours?
Why, hell! Just throw her out of doors.

[SPECIAL POLICEMAN takes seat. Proceedings interrupted by heavily-armed PEACE OFFICERS from Kansas on the scent of a moral degenerate guilty of unlawfully shooting a snipe; the nose knows. PEACE OFFICERS take seats. Enter two FIELD ARTILLERYMEN, National Guard, wearing .45 Automatics. They do a ring-around-MAQUEDOUX. Symbolology: the MILITIA in ecstasy over the MAJESTY OF THE LAW.]

The ARTILLERYMEN. Why, everybody knows our names:

We're GYP THE BLOOD, and JESSE JAMES.
None so happy as we:
Gats are issued, shells are free:
On darkest nights, God bless your soul,
We rake in cash, and come back whole.

[ARTILLERYMEN pin a white feather on I'MRIGHT's lapel and take seats. Enter COTERIE of defaulting BANK OFFICERS, in State's design stripes.]

The COTERIE. You look, dear friends, upon the ranks

Of men most intimate with banks:
If guns to us you did deny
To whom would all your money fly?

[The COTERIE take seats.]

GUNBUG. Sweet friends, upon our little stage,

We run a motley, fool and sage:
From every walk, from every clime
We draw to suit our curious time:
The number next upon our slate
Is GOVERNMENT RE-GENERATE.

[Enter three GENTLEMEN in high hats, two black-garbed, the third in star-spangled coat and red-and-white striped trousers. From a ring in the latter GENTLEMAN's nose, a stout rubber band leads to the hand of one of the OTHER GENTLEMAN: one end of a RED TAPE tightly wound around his body leads to the hand of the THIRD GENTLEMAN. Symbolology: the United States under the benefit of elastic REFORM LAWS and of CIVIL GOVERNMENT.]

STAR-SPANGLED GENTLEMAN.

My nephews and my nieces dear,
By your sweet choice, you've got me here.
By this, by that, by those, by these,
I can do anything They please.
Dear FAMILY, ere this farce shall end,
You shall learn more. CHILDREN, attend!

[Black-garbed GENTLEMEN are seated: STAR-SPANGLED GENTLEMAN remains standing, as far from them as the bonds will permit. Enter a JURY from Oakland, after acquitting a POLICEMAN guilty of killing a man in attempted blackmail.]

The JURY. Oh, surely, arm the officers!

Who else should murder prisoners?
What simple person, seeking kale
Works half as well as NIGHTINGALE?

[The JURY take seats. Enter the LAW ENFORCEMENT COMMITTEE of the AMERICAN BAR ASSOCIATION—hereafter referred to as COMM. A. B. A.—disguised in the robes of Doctors of Law. On the breast of each COMMITTEEMAN is the following device: Arms; "argent,"² a dollar-mark "or";³ Motto; "In Hoc Signo Vincas."⁴]

COMM. A. B. A. The pistol is quite useless in the commerce of today;
It's ninety per cent wicked, and it should be lawed away:
We wish to call attention to the mottoes we display:
We're out in search of business—and laws have lots to say.

[COMM. A. B. A. are seated at the prosecutor's bench. Proceedings interrupted by assembled heavily-armed PEACE OFFICERS from divers States, searching for two felons, SPERRY & HUTCHINSON, charged with the unlawful uttering of green trading stamps. PEACE OFFICERS seated among spectators. The MAGISTRATE raps for order.]

The MAGISTRATE. I open up this court of Law,
To try a villain, coarse and raw.

2. Silver
3. Gold
4. "In this sign, conquer."

We will proceed. I'MRIGHT, away!
Bring in the crook without delay.

[I'MRIGHT disappears. I'MRIGHT and THE INTERNATIONAL SHERIFF bring in a long-necked rascal by the name of SAMUEL COLT, whose body appears to be made of six short lengths of stove-pipe, bound together. THE INTERNATIONAL SHERIFF is clothed in a coat of whitewash. Symbolology: the POLICE and the CLEAN NEWSPAPER curbing the HAND-GUN.]

INTERNATIONAL SHERIFF.

I found this dirty loafer in
The home of one John Doe:
If anything is worse than that,
Please someone let me know.

[They stand the prisoner before the COURT.]

COMM. A. B. A. [To prisoner]

You foul offensive renegade,
In hell conceived, by devils made—
By all the powers above, below—
What did you in the house of Doe?

SAMMY COLT. "Ich Dien."⁵

MAGISTRATE. Don't spout your Greek in here, you fiend,
Or I'MRIGHT there will have you beaned!
Now tell them straight, by this and that!
What right had you in John Doe's flat?

SAMMY COLT. "Ich Dien."

CHORUS. Again! Again! You worthless hound!

Again you voice that horrid sound?
Silence to your cursed tongue!
Who speaks for him before he's hung?

STAR-SPANGLED GENTLEMAN.

I speak for him. In other days—

[Vicious tug on rubber band snaps the speaker's head violently: STAR-SPANGLED GENTLEMAN continues:]

I speak for him. —

[Vicious tug, as before. Enter PESTIFEROUS INDIVIDUAL, probably of that deplorable type known as AN AMERICAN.]

PESTIFEROUS INDIVIDUAL. I speak for him.

CHORUS. You speak for him? And who are you,
That you should question Maquedoux,
Who wrote the Anti-pistol bill?

PESTIFEROUS INDIVIDUAL.

JUDGE TRUMAN SNELL of Carlinville.⁶
I speak for him. I would compel
All men to know him—know him well—
A crimeless road, a peaceful green,
Are yours when SAMMY barks: "Ich Dien."

The MAGISTRATE. A Judge? A Judge! O Holy Smoke!
Who'd make a Judge of that old bloke?

COMM. A. B. A. O Heresy. Go to, we say!
You're scabbing on the A. B. A.!

CHORUS. Out—out with that degenerate!
Vile unbeliever! Apostate!

[COMM. A. B. A. bounce PESTIFEROUS INDIVIDUAL. Enter party of BOOZE RUNNERS from Moss' Landing, California, bearing a machine gun with notches cut in its butt.]

The PARTY. Who said a pistol's any good?

Dat guy's head is made o' wood.
We trowed our gats into de sea,
Den cleared de pat' fer Liberty!

[The PARTY is seated. Enter the CORONER'S JURY in the case of DOROTHY ELLINGSON, San Francisco, who shot her mother, then went out into the night of vice from which the murdered mother died to save her.]

The JURY. We, as a jury, duly find,
It was a gun wrecked DOLLY's mind.
The dear, street-walking little souse,
Could have no fun around the house.

5. "I serve."
6. Illinois.

A lust for shame she had to fill,
A lust for Gin — she *had* to kill.

[The JURY take seats.]

GUNBUG. I've waited long to hear it said
Why DOLLY wrapped the butchered head:
Perhaps some day the jury'll bawl
A great denouncement of the shawl.

[Enter party of able-bodied SEAMEN from the good ship "Jolly Roger."]

The SEAMEN. We're awful fond of Maquedoux,
We like his dear friend I'MRIGHT, too:
We like their Weapons Act because
We've earned so much through Opium laws.

[Heavy clank of gold in money belts as they take seats. Proceedings disturbed by voices off-stage: armorers of the Mauser and Luger factories singing "Deutschland Über Alles."]

The MAGISTRATE. [To prisoner]
You, SAMMY COLT, you vicious elf,
Should go somewhere and shoot yourself.
Come now! What words will be your last
Before my worthy judgment's past?

SAMMY COLT. "Ich Dien."

CHORUS. Again! Again! 'Tis past belief
To cast this insult in our teeth!

COMM. A. B. A. Your HONOUR, write us out a writ
Of Hocus Pocus — banish It!

[Proceedings interrupted by distracted SALES AGENT of American Arms Company rushing madly through.]

SALES AGENT. With orders coming, fast and thick:
"Some twelve-inch pistols, send 'em quick!"
[Shouts] Gunsmiths! Send me Gunsmiths! Top wages and
a steady job.

[Rushes madly out. Immediately followed by the MANAGER of a tool factory in like condition of distraction.]

MANAGER. By every wire, by every mail
"Deliver hack-saws without fail."
[Shouts] Toolsmiths! Send me Toolsmiths! Top wages and
a steady job!

[Rushes out.]

The MAGISTRATE. Before I pass my sentence on
This hopeless, heartless vagabon',
We'll play to HOYLE. I'MRIGHT, away!
Go post the guard without delay!⁷
For such is now the ritual
Of courts both State and National.

[Silence, except for the sound of armed Militiamen being posted throughout the background, and the stealthy influx of heavily armed Peace Officers into the court. Symbolology: the popularity of Justice when administered by the proper authorities. I'MRIGHT returns.]

MAGISTRATE. [Rendering judgment]
Now then, SAM COLT, I duly find
That you've raised hell of every kind:
Before your time, with dirks and knives,
The men would steal each other's wives:
With clubs and axes, spears and staves,
The strong would make the weaker slaves.
With bows and arrows, slings and stones,
And bludgeons made of asses' bones;
With whips and knouts and morning-stars
The dear, good people went to wars.
It's very clear, you modern whelp,
They got along without your help.

[Proceedings interrupted by entrance of four policemen bearing stretcher on which is the lifeless form of OFFICER FLOUNDER-FOOT, Gas-house beat, struck over the head with a lead pipe and robbed of his gun while expiring.]

MAGISTRATE. [Passing sentence]
Enough! Enough! No more to say!

I'll sentence you without delay!
Right at this most opportune time,
Behold! You are the cause of crime!
[Shouts] Let every law-abiding geek
Rise up and throw you in the creek!!

[Disturbance off-stage: loud shouts of "Banzai" from an island people whose census is increasing at the rate of 600,000 yearly. Unarmed party of potential AMERICAN MAN-O-WAR-MEN pass through court singing, "Secure we rest upon the wave."—Cheers from the authorities and assembled spectators. Enter two heavily-armed SOLDIERS of a foreign power, with red stars for collar ornaments, shaking hands with one another.]

Two SOLDIERS. Thanks be to Comrade MAQUEDOUX,
A Paradise! Such women, too.⁸ [Indicating audience]

[SOLDIERS are seated. Enter "two POLICE CONVENTIONS, representing twenty-seven nations, including the UNITED STATES and Canada."]

Their SPOKESMAN. JUDGE MAQUEDOUX, I here present,
Our Order's highest ornament:

[Produces GRAND SUSPEN D'OR.]

The Order rules that I invest
This Suspen d'Or across your chest:
This mark of honour from our clan
Will tell the world: here stands a man!
And with it comes this six-point star

[Produces JEWEL of the DOUBLE-CROSS, cast in a Spanish revolver factory.]

Which tells the kind of man you are!
[Completes full investment of MAQUEDOUX with SUSPEN D'OR and JEWEL.]

And gladly do we thus emboss
A MASTER OF THE DOUBLE CROSS!

[Loud hurrahs as the NIGHTINGALE JURY kneels at the MAGISTRATE's feet and kisses the hem of his garment. Symbolology: the JURY's adoration of JUSTICE. STAR-SPANGLED GENTLEMAN reels backward, but is rapidly brought to his feet by the reform laws fastened in his nose. Proceedings interrupted by the advent of a platoon of Chicago police escorting a hearse bearing a solid silver coffin: in this coffin are the remains of a gun-man with over twenty killings to his credit, for none of which he had been brought to answer. Hearse followed by four trucks carrying floral pieces worth \$50,000. Trucks followed by MUNICIPAL JUDGES, STATE SENATORS and REPRESENTATIVES, POLICE OFFICIALS, bootleggers and denizens of the underworld. The COURT bores in sorrow for such noble dead; STAR-SPANGLED GENTLEMAN is rapidly snapped into the procession by the Red Tape in the hands of CIVIL GOVERNMENT and the elastic Laves in the hands of REFORM. The prisoner takes advantage of the situation, and speaks to the LOQUITOR, indicating the funeral cortege. Symbolology: The propensity of the pistol to provoke crime.]

SAMMY COLT. "Ich Dien."

GUNBUG. No, SAMMY no. My very soul
Goes grey with UNCLE in that hole,
But you and I are far too few
To do the things that they should do.
[Indicates the PROPER AUTHORITIES, sorrowing in the court.]
Come, SAMMY, come away with me:
We'll hunt the Land of Liberty:
I'll wrap you up, on frosty nights,
In UNCLE's worn-out BILL OF RIGHTS.

[GUNBUG and SAMMY COLT close the curtains on the mourners; then face the audience.]

GUNBUG. [To audience]
For want of oil, the lamp dies out:
Soon boogaboos will be about.
Dear folks, I've naught to give nor lend
Nor share with you—except a friend.
Good folks, for you and all your clan,
This much we do, as best we can:

[They bow and speak in unison.]

"Ich Dien."

[Exeunt]

7. This was done at the trial of Leopold and Loeb.

8. Women were nationalized in Russia.

A Way to Weigh

By B. S. Albertson, Jr.

THIS way means the end of the old clock, some spokes out of the kid's bicycle, and wife's flat brass curtain rod, but we should worry.

Like most of the brethren, I am cramped for quarters—and nickels, too—so a Bond powder balance goes into the Rolls Royce

new job is a bit more difficult. Take off the balance spring, carefully cut the spokes close to the brass hub and file smooth. Set aside.

Cut from the brass the length for beam allowing about one-fourth inch for finishing and any errors in balancing. Finish to nearly final shape and center punch a center. Drill this through just a shade smaller than the hub left on the balance staff, which is then fitted into place on a drive fit.

About one-half inch from each end drill a hole, also drive fit, for the cup hooks, fit them close up and close the hook, making an eye of it. Now turn the bottom edge up and two inches each side of center drill a hole to size of the bicycle spokes. This for the adjusting weight also shown in Sketch No. 1. Fit this allowing about one-half inch clearance from edge of beam. In the top just over center drill another hole, same size, for the indicator hand.

The base brass is filed out the width of the brass 3-8 x 3-8-inch and the width of the pillars (at shoulder) apart.

Cut the standards to approximate length and clamp together, file where required and drill for spacers (the pillars).

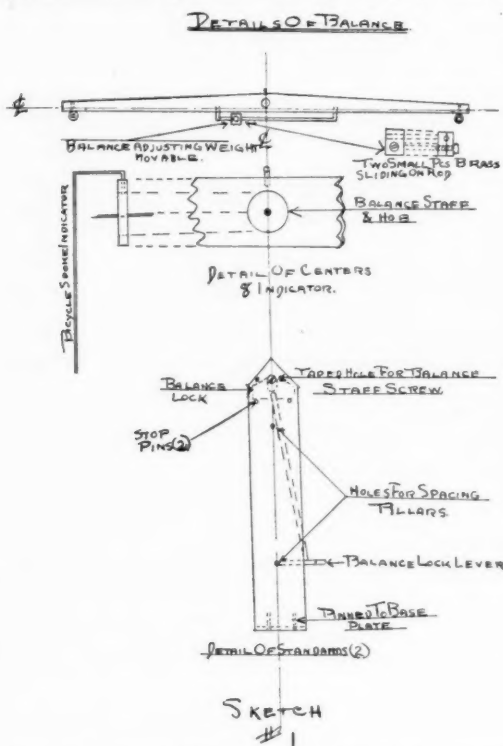
In order to handle easier I then run some short bolts through these holes, set up tight on them and removed the clamps.

Now measure for the holes to take the screws that centered balance staff, make them small enough to permit taking a tap, and tap both at once.

Take out bolts and fit to the base brass, I drove mine in then put in the vise, drilled two holes through bottom brass into standards, then pinned and soldered.

Now fit and fasten the pillars, putting the balance lock handle on the lower one, screw the balance screws into these places and get out the bicycle spokes. Don't cut off the head of the two that are to be used to support the pan, nor from the one connecting the balance lock lever with the balance lock.

As this balance is built it is impossible to



class with Yours Truly. But I did want something a little better than a camera crank's balance. Being reasonably honest, I did not steal one, so had to dope out "something just as good." My recipe goes like this:

That old clock has been lying around since the Lord knows when.

Four spokes from the kid's wheel, be sure he is not around.

About four feet of 1 x 3-15-inch flat brass.

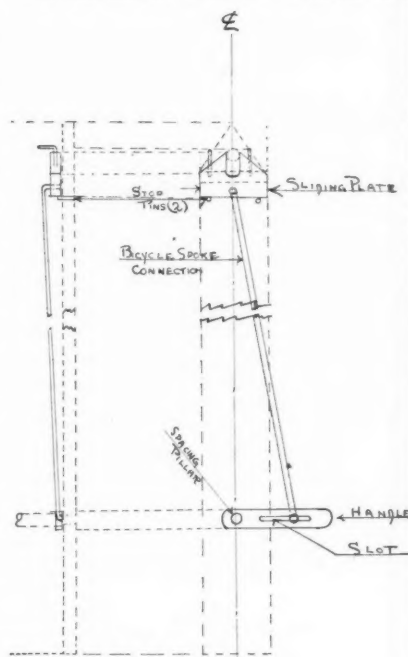
Two brass cup hooks.

Sheet brass 10 x 10 inches.

And the old work bench and tools.

First we operate on the clock, removing the balance wheel and the four pillars that keep the front and back plates apart and together. Be sure and take the screws upon which the balance has been entered. Two of these pillars are all that you will need, apply as in Sketch No. 1.

Fitting the balance staff to its



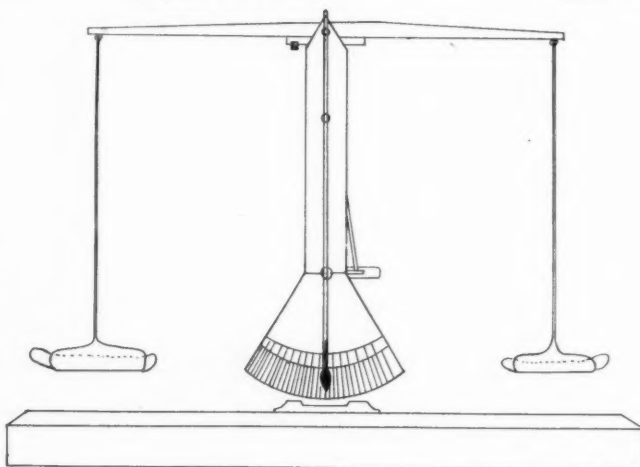
lift the beam off its bearings, as is done with the commercial product, so I rigged up the gear for holding beam steady. This consists of the sliding plate cut from the heavy brass flat, a handle mounted on the lower spacing pillar and a connecting rod.

On the one I have the plate is made as per sketch, having a guide slot cut beneath the balance screw. A better plan would be to cut slots over the stop pins, or lengthen the plate and place the stop pins and slide entirely inside. The connecting rod hole is slightly countersunk and the rod flared to keep in place.

My first handle was simply bored for the rod, but this caused the slide to slip diagonally, so I slotted it as shown.

The two L shaped gadgets on top of the plate bear against the lower edge of the beam when the lever is up and permit placing of weights and powder on pans and lock beam when not in use.

(Concluded on page 23.)



AS IT LOOKS COMPLETED

THE Marine who enlists for three years' service and gets ten minutes' action in that time is considered lucky. The hunter who goes into the deer country and successfully "smokes up" his buck for one minute in four days' hunt is just as lucky, and the party that "fills" in the woods demands metaphors and superlatives to describe their luck. I do not want anyone to think for a minute that I always come back with my buck, nor to mislead him, for such is not my intention, as this is not a poker game.

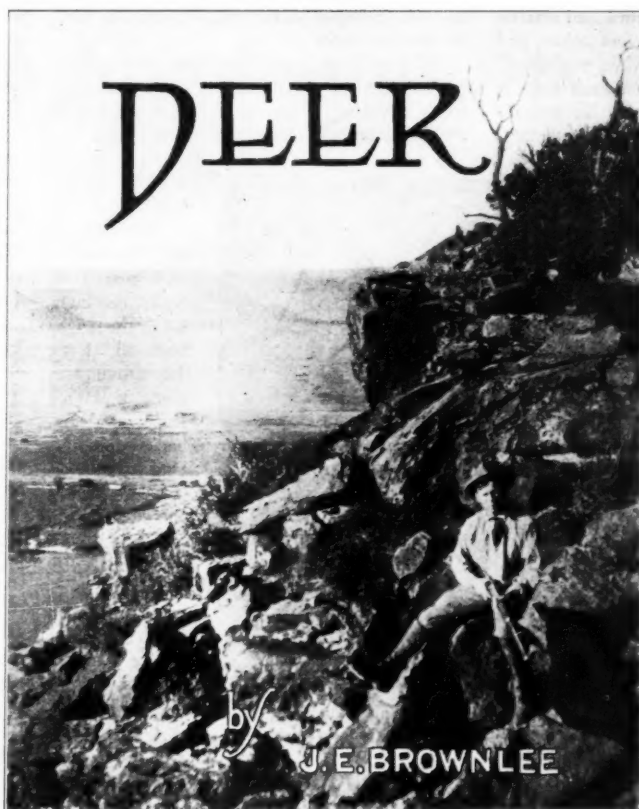
I recall one year, when weather conditions were not right, that I hunted in three states for fourteen days without even a shot at my buck. The last day I jumped my white tail buck on a high point of rocks. There was a spring of the buck into the air, the crack of a Springfield, a flash of a white tail, and a thump, thump, thump of his feet, and he was gone forever—a clean miss. Such trips while of interest to the hunter, are of no interest to the reader, and in this, and two other articles, I will confine myself to the three successful hunts which I mentioned in "Shots at Soap."

While president of the "Alibi" Club of Lamar, Colorado, I was arrested on the charge of being a fine rifle shot, plead guilty and paid my fine. The other members of the party who took the trip described hereinafter with me, are old offenders at this bar, and if they were duly prosecuted would be sent up for life. But, you will see that we missed deer standing broadside at less than fifty yards. Horrors! But, let us take the trail with the automobiles.

In Las Animas County Colorado, the Dakota sandstone (which is at sea level under Denver) is on the surface of the earth and a mile high on the New Mexico line. This strata dips northward twenty feet to the mile, while the surface of the earth slopes to the east ten feet to the mile. This high and dry country is cut and carved in bold relief, by canyons, some of which are 800 feet deep and all with rugged, ragged and sheer walls. The whole country is covered with a liberal growth of pinon pines and cedars, the whole area being known as the "Big Cedars." It is almost a day's work for four men to get a buck up out of these canons to the camp on the mesa above, so the wise hunter, and lucky one, kills his buck dead on top, or on one of the high benches.

In the Rocky Mountain country, the character of the trip, will call for special equipment. In the high places where you pack in on horseback for fifteen to 35 miles, you will not use nearly the same outfit that you will where you can drive and push your automobile to the dry camp. This hunt is of the latter class.

Our outfit consisted of Noel, Ira, Bob,



Ethan, and myself. Four of us had been to Caldwell and Camp Perry, and there is an official record of our ability to shoot the rifle and craps, but I am dreaming, for the official records and the mud are no part of this outfit. Just the five men and better friends never lived.

In addition to said friends, our outfit included two Fords, one pre-war and the other "as issued"; twelve Army blankets, chuck box, dutch oven; ten gallon milk can of water; bottle not containing water; 8 x 10 tent with fly (rest of them were dead); camera; provisions for a week; and a first aid outfit. The latter was not intended for use on deer. The rifles and ammunition will be introduced in the order they appear on the stage.

We had 150 miles to go, and two days to do it in before the season opened on two point or betters, and we rolled south with our enthusiasm registering about ten miles per hour above the speedometer on the lead car. As we neared the hunting grounds, the roads became almost impassible or vanished at the back door of some adobe house (only door it had). The cattlemen living in the country were hostile to our intentions, and to all city hunters, in particular those driving Ford cars and leaving the gates open. As a result we were given wrong information which put us off the road or trail, several times, though we knew the general direction we wanted to take for the deer country. The native Mexicans could not, or would not inform us. The afternoon of the second day found us about 25 miles from where we wanted to go, and the

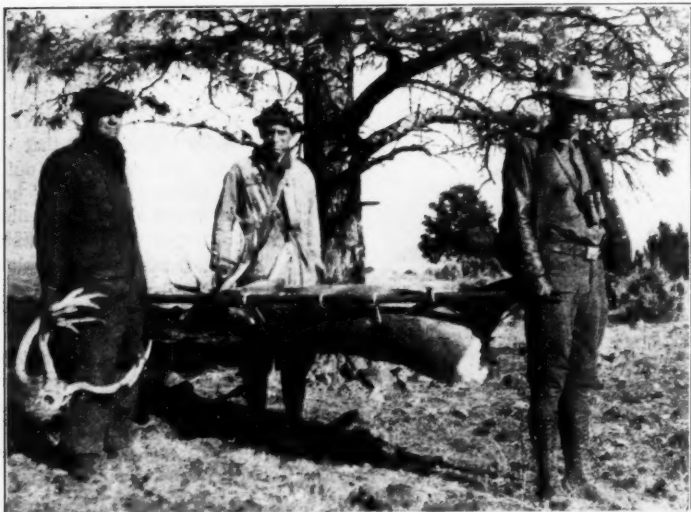
road all but terminated at said back door of a Mexican. He could not talk English and at the time I could not talk Mexican, and have not changed my opinion since then. He knew about what we wanted and pointed to the west and said something that sounded like "Alta Loma." We did not know what it meant but one of the optimists suggested that it meant "High Way," so we decided to try it out. There was really nothing else that we could do. We soon found out that if he meant "good road" he lied to us, and if he meant "helluva hill" he certainly said a mouthful.

Only you who have blown your breath in the gas tank of a Ford to get gas in the carburetor and have pushed it up a small hill that rises up some 800-odd feet in less than a mile know what we were up against. Those Fords were certainly like a couple of doggy calves and we raised them by hand. Some geologist said that God never made two mountains without putting a valley in between, and I know of no hill that He constructed without putting a summit on it. It was five o'clock when we found one on this hill, and we certainly did hug the high ground of that mesa the rest of the trip. Night found us where we wanted to be—on the brink of the canon wall, near where two large laterals joined it. It was a hungry bunch that tackled a cold lunch that night, for all were too tired to cook or make camp. We slept the sleep of the innocent as a coyote chorus rendered a program for our benefit.

Time must have made a big mistake when he ordered sun up the next morning, for we were all positive that we had not been in bed half an hour. A breakfast of bacon and eggs, and a tin cup of coffee and we were awake, and ready for the hunt. It was an hour after sunrise and two hours after we intended to leave, when we slung our rifles on our shoulders and were off in pairs, leaving one in camp for cook and honorary Officer in Charge of Quarters.

The fireworks started before I was really looking for it, when Noel, who was hunting with me, busted a coyote with his long Krag and Newton soft point bullet (172 grain, I believe). I use the word "busted" for the reason that my dictionary contains no high priced word that will express my meaning. He hit him at 107 yards in the paunch. That coyote dressed himself automatically, and I am fully convinced that if Noel had requested it that he would have shed his hide also. The hole in the off side was just as big as the coyote was up and down (about five inches). He was pushed sideways about four feet, and he showed considerable signs of erosion, the talus being considerably scattered. We hung his hide on a limb, and the hunt continued.

We then went over the rim rock and started down on to a bench about 100 feet below, and had gone but a short distance when we jumped a six point buck (six points on each horn if you please—Colorado Statutes). He was directly below us and not fifteen feet distant.



When you carry one of these big, black tail bucks for three miles, even the camera man cannot coax a smile. Title cut on preceding page shows the edge of the deer country in Southeastern Colorado

As he ran parallel to the bluff and following the contour, my Springfield broke the silence of the canon, where you could hear the flapping of a bird's wings a half mile away, and the buck went down at 46 yards, but was up again and going strong. Shooting down on his broad fat back from above discounted his leaps and a comparatively easy shot, so I let drive with a second shot at 95 yards and scene two, act one, was a miss. (You see that they allow sighting shots when deer hunting in Colorado. While the law does not limit you, I try to use only two.) By this time Noel was taking his second shot at the buck at 125 yards, and was also a miss. He was behind me for the first shot and my left ear is still under the weather on account of it. We went after the buck, looking for blood and corruption. When the buck fell it was because he was crossing a smooth slab of tilted rock and slipped. I have tried to tell myself several times since that I hit that deer, but I have never had the nerve to do so. I was not really looking for deer so soon, and was using Service ammunition, and battle sight. Neither of these facts has been sufficient to get me anywhere with the Alibi Club.

A little later we heard the other boys shooting far to the east. We counted fourteen shots. We met them in camp, and spent the afternoon bringing in two black tail bucks. They were fat and weighed—oh well I never was a good fisherman. The fact is it takes a good big fat black tail buck to weigh 190 pounds dressed. White tail bucks are somewhat smaller. You who have killed a 300 pound buck, are you a fisherman? Answer both. (At this point attorney for defense directs his client not to answer the question

for fear it might incriminate or degrade him. Motion sustained.)

The deer were about the same size, and we carried them in using the tent poles and ropes for a stretcher. The second deer *seemed* to weigh about 600 pounds as we got him into camp after a hard day's work.

They jumped the deer on a high point of rocks, the highest in the neighborhood, and they drove them along a long slope of a hog-back in scattering timber. There were three bucks in the bunch, but one apparently escaped without injury although fourteen shots were fired, I think. The number of shots is disputed for Ira and Bob both contend

that there were but six shots fired. Such is the life of the hunter, and we will let the tale go with the hide.

One buck was shot with a 303 Savage, with Winchester soft point ammunition. I stepped it off from where some of the empty shells were and it was 103 yards to the four point buck. One shot was through his heart, and one broke his shoulder, as the deer was running sideways to the hunter (like nearly all good deer do). The heart was torn wide open, and where the bullet came out on the opposite side, there was no larger hole than a close fit for your thumb. In spite of this, the meat of one shoulder was almost ruined. I never cared for Bob's rifle, but I must confess that he was always able to deliver the goods with it, but if the truth were known, there was considerable luck in where he hit his game. Bob won't agree with me on this.

The other four point buck was shot with the old Krag rifle and old style Newton soft pointed bullet (172 grain). This deer was walking when the first bullet exploded its heart at 70 yards. I do not know why deer refuse to stay down when hit this way, but it has been my experience, in every case, that the deer will jump up and run, and this was no exception. The second shot (hit) was through the lungs at 115 yards, and he quit the game. This shot took out a piece of rib, and was a beautiful piece of bullet work. This was the biggest buck we got on the trip—600 pounds *supera*.

The hits on these deer were four, where did the other ten sighting shots go? There was another deer in the bunch and so there must have been the usual per cent of misses.

But two of my friends when they read this will write and say there were but six shots.

The second morning of the season, I had my chance at a buck standing at 238 yards. He was under a cedar tree, head on, and head held high. He was watching me. I might say that this is the longest range shot that I ever took at a buck for the first shot. He looked at me with idle curiosity as I looked his head of horns over with my field glasses, but I did not need glasses to see that his six point head was what I had been looking for for 25 years. It was even better than the one I missed the first day. I had my old pet Krag carbine with me, having left the Springfield in camp. No need to use windage, I would not elevate the sight but aim at the top of his antlers and the bullet would enter just below where his food did and would come out the other end, and maybe, I would not be bothered about dressing him. (I was not.) It was not sunrise yet, but the light was fairly good. I sat down behind a tree, rested the gun over a broken limb of the cedar tree, and squeezed her off. How that gun did roar and echo! Six times the echo reached me, but I did not even scare the deer. I threw in another shell, heard something running and turned to see, and when I turned back to



This picture, besides showing how to amuse yourself when it is your turn in camp, is to show the holes in the front right shoulder of two deer where the bullets came out. The third deer was used for camp meat.

Notice the dress to keep from being mistaken for a deer. The red bandana pinned on the hat, the wool clothing with coveralls dyed the color of the green pinon pines. Khaki is the worst color in the world to wear in deer country—as bad as wearing black in bear country.

my first love, the deer had vanished. I was disgusted, this was the second time I pulled this bonehead, and this time I shot between the horns for a clean miss. Noel came up in time to laugh at me. The hunt had turned into a joke for me. I made up my mind that I would shoot at the (Continued on page 27.)

Sixguns on Meat and on the Hip

By Elmer Keith

Dear Price: Was rightly glad to get your long interesting letter. C. T. wrote me, he had to spank you for slandering the peace-maker some time ago.

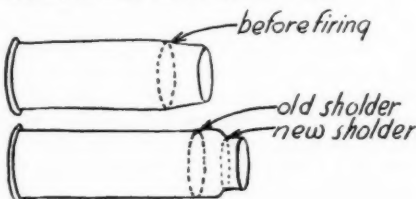
Have noticed a decided difference between the .38 Special and .45 Colt on small game such as grouse and Jackrabbits. The .38 usually lets them get up and fly or run off while the .45 seems to numb or paralyze them. Also have shot many hundred gophers and woodchucks with these guns and the .45 seems to have the better of the deal.

I have noticed that coyotes seem to die about as quick from a .22 shot through heart as they do if you tear the heart clear away with the Special. So maybeso, that is the reason your dogs absorb .45's as well as .38's. I once shot a big Newfoundland sheep killer with .32-20 S. A. Army. Emptied gun behind left shoulder at about 30 yards as he ran sideways past me. He went under an old binder having his rear end sticking out. Loaded up and put four more all Winchester S. P. in his rump, when he raised his head and I landed the eleventh shot through it. After each of the first six bullets struck, he would swing his head and snap at his side where bullet entered. I could see the dust raise on offside every shot of first six.

Have hunted coyotes most of my life and believe them the toughest game animal in the world for their size. Have seen them run two miles with three 06's through them. Their stomach, liver and most of the intestines left on the snow a mile behind them and then one took five more six gun bullets before he quit. Your tame dogs are no doubt similar. I'd like a 260 gr. .45 Colt hollow point mold. Have seen trapped coyotes curl up almost instantly from a .22 short through heart and again live five minutes with heart badly busted from a .45 Colt or Springfield. Can't understand it, but on other game animals the .45 has the .32-20 and .38's beat a mile.

When you have time and the chance try killing a couple beeves with the two shooting through heart or lungs broadside. Then I believe you will note the difference. I find the .45 hand loaded to be more accurate than the .38-40 with factory loads.

That is, first shoot expanded cases to fit cylinder, then load with 40 grs. FFG and 255 or 260 gr. bullet cost 1 to 10 or 1 to 15 tin and lead. I used a .38-40 S. A. and finally quit it. It always expanded the empties to within $\frac{1}{8}$ in. of muzzle of shell, so left almost nothing to seat the bullet in. Thus



Note by Chauncey Thomas

I introduced these two gun colts to each other by mail so that they could pow-wow about their Colts guns, and the letters land in the RIFLEMAN via my hands. Good reading, so here is Keith's. He told me to use my own judgment and this is the day of judgment when, according to good authority, all things shall be revealed.

Some day when I am feeling healthy I may write an article on quick draw. All except one way, that I have always kept to myself. But merely to outline hastily here.—The object is to get the drop on the other man, or often men. Quick draw is just one of several ways to do that. My system is simple. I hold with Jim Hickok, ("Wild Bill"), as the dying Cody worded it the last time I saw him, on his death bed—"Jim wasn't a very quick or a very good shot, but he started first." Fifty years in the Rockies, plus, and 39 years this summer with the Peacemaker .45, for personal use, perhaps, I have boiled down to this—"Start first, go slow, shoot once." I think that that beats any snatch method. If covered at close I'd hoist them high and quick. Nothing else to do if one would stay below or above, as the case might be.

The mental attitude is more important than any gun position. Hickok was covered once, but by telling an imaginary man behind his opponent—"Don't shoot him in the back," he diverted that opponent's attention, then quietly killed him with one sure shot.

The step-rather of Jesse James had pretended trouble to unlock the front door, when he opened it Jesse got four out of the six, and the whole six had drawn guns, all eager to shoot. The other two left, and so did Jesse, but not as fast as they did. The four stayed till the coroner came.

Many moons back two men in Leadville, if I recall aright (?) were seated at a table opposite each other. One man "dived for his gun" and the other man merely shoved the table over on top of him, pulled his own gun at his leisure, and had the first one nicely covered when he untangled himself from the chair and table legs.

Hand work will not take the place of head work. C. T.

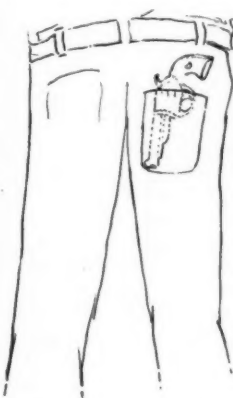
Had to be resized to fit bullet properly and then did not fill the extra long shoulder in cylinder. I used all bullets up to Winchester .40-82-260 gr. Both Du Pont No. 80 and

Bull's-eye, also 40 gr. black and 2 gr. bull mixed. And finally went back to my first love, the .45 S. A. Colt with its strong shell.

The .38-40 don't seem to penetrate bull elk nearly as well as the .45. I killed a big blacktail buck with .45 Colt, loaded with Winchester .45-90 300 grain lead bullets sized to .454 and 35 grain FFG black. First shot hit shoulders broadside, second hit shoulder and angled out neck. Both went clear through and out the deer. First one knocked him down. I believe the old .45-40-255 gr. load produces more shock on anything than the .45 Auto. load, from my observation at least. What has been your experience with these two in comparison?

Personally I prefer the S. A. for the hills. But I've been raised on one in the hills of Montana. Was born in Missouri but raised in Montana. In cold weather I can always get action out of the S. A. when my fingers won't cock the N. S. or move safety on my .45 Auto. Also the S. A. fits my hand better than any six gun or Auto. I can do better quick shooting from hip with S. A. than any gun. I usually shoot low with both the N. S. and Auto. I agree with you about the springs. I've had several breaks. Believe these springs could be strengthened, however.

The .45 $4\frac{3}{4}$ in. or $5\frac{1}{2}$ in. S. A. in holster in waist land or right hip and a .45 Auto. on other side is a fine man combination. You can pack the S. A. on belt on right hip and Auto in waist band on left side. I don't like C. T.'s way of packing the S. A. in his left pocket. I can't get it at all that way. A $4\frac{3}{4}$ in. S. A. works fine in right hip pocket with grip to front, thus, and I believe is



quicker for me at least than the left hand draw. The waist band is quick for any gun and I believe the best for the Auto. I can use the S. A. from the holster on right hip better than any other way I've yet tried. My holsters leave both hammer and trigger guard clear and I cock gun as I clear holster.

You no doubt have practiced slip shooting with right hand alone on the S. A. by holding trigger back and throwing the hand and flipping hammer with thumb? I can hit anything the size of man up to 20 or 30 yards this way and do it pretty fast. I don't see any good in the old style of two hand fanning.

I've never tried aerial work, probably could not hit a can with a gun full. But it is about

the best quick practice I know of. Personally I cannot get a gun from a shoulder holster at all, have practiced it on right hip too long and always reach there in an emergency. Have never tried the Auto. riot cartridges. All same shot gun I guess, but believe if I had to kill a gunman, would prefer regular loads.

If a man packs two guns on belt, then I prefer them both in right hand holsters, the right hand gun butt to rear and the left hand gun butt to front. With a little practice one can get a gun this way with his left hand by turning wrist and also have both guns ready for the right hand, in case one runs dry. Also it's hard to tell which way a man will draw if packing guns this way. He can use either hand to block the others draw if close and the other to shoot. Fitzgerald is fastest two gun man I've ever seen. Watched him quite a bit at Perry. I can not do any good with two guns at once. Prefer to use one at a time, and land my shots.

If one wants his guns concealed, then put the Auto. in waistband holster on left side of belt buckle and a 4 3/4 in. S. A. in right hip pocket, butt to front. When the hands are in trousers' side pockets this right hip pocket butt to front draw is mighty quick and sure. Fitzgerald shoots a double action upside down from waist line with left hand and little finger. Gun on left side of belt buckle and butt to right—a mean trick.

You are getting fine groups from your S. A.'s. Glad to know Remington has quit those damned squibbs in .45. Try casting 255 gr. .45 one to 10 tin and lead and 40 grs. FFG and believe they will out penetrate the M. C. .38-40's.

I have several hundred .38 Special empties and bullets. Have you any need of them? I need 44 Special shells, also .45 Colt empties.

Have enjoyed your articles in RIFLEMAN very much, and am mighty glad to get acquainted with a fellow six gun crank.

Tried the riots. They seem to spread to about the size of one's hand at 10 to 15 yards at 50 I could not hit an oil can. Might be O. K. for crippling niggers. I was born in Missouri so know something of conditions in your country.

I watched a demonstration of .45 Auto. tracers at Perry last fall by Ord. Department, different colors also some changing from one color to another. They went straight for a ways, then as they lost weight due to inside burning out, they began to curve. They were figuring on them then for signal purposes. People in Port Clinton, about four miles away could see them plainly as you see they go high. Believe mixed slugs (regular bullets) and tracers would work better than the riots.

You are no doubt a ten times better pistol shot than I. I do not have the money to practice very much. Agree with you on the chicken proposition. I usually just bore them through the middle if in a hurry, as these legorns are like a teeter snipe, always on the go. Can hit their heads if still, but hard to do otherwise.

Have shot clear through big blacktail bucks on two occasions with .45 Colt .45-40-250 and

.45-35-300. I blow through gun after every six shots to moisten powder residue. Next shot kicks it out.

Coyotes are thick here. Had sixteen shots at them last winter with free rifle .30-06 and scope, hit 15x16 shots none under 200 yards and up to 500 yards. All prone and sling.

Jumped two yesterday. In the morning I did not have the six gun along so tried to run over him on bronc. Got into rough country and had to quit. In the afternoon I jumped one about 50 yards, jerked the .45 S. A. and shot quick off bronc. Must have chipped his under edge as he humped up and come back past me, but bronc went to kicking so I could not hit again. Quit after third shot, second low and last one way high. Then horse got so damn rough I had to ride.

Have killed many coyotes, hunted and trapped them for several years. I like to hunt them with rifle. I once broke one's shoulder at 300 yards running with .38-40 S. A. third shot. Have killed a lot of them on horse and in trap with six gun. They seem to die much quicker from a .45 than from the .32-20, although I shot one three times with Springfield after which he bit off his stomach and intestines and run three miles till I finally finished him with five hits from a .32-20 S. A., a rope on his neck and my pards fence pliers.

Guess the long .38-40 is O. K., have never used one. Don't like a long six gun unless the .44 Special N. S. target for paper works. Too slow and unhandy for quick work or off horse. I found the .45 hand loads more accurate than .38-40 factory loaded in 5 1/2 in. gun. Never tested the 7 1/2 in. .38-40.

That .44 Special S. A. in 4 3/4 in. or 5 1/2 in. should make a fine gun. Never owned one in this caliber. I remember A. C. Rowels article. However, my .38-40 failed miserably to penetrate elks skull as I wrote in a letter to Thomas which he published. Also my gun was over chambered. It expanded shells nearly to muzzle, having almost no neck to seat bullet in.

A hard bullet in .45 say 1 to 10 penetrates good. By the way a deer will mushroom a .32-20 Winchester low velocity perfectly from 7 1/2 in. S. A. Colt, wood went to it.

Agree with you on penetration of Mauser and Lugers, but don't like the damn things. How many grains black can you use behind Winchester 300 gr. bullet? Have never used over 35 myself.

The Fourth I blew a S. A. Colt .45 5 1/2 all to hell. Three chambers and top strap left me complete. Two cartridges went at once. Don't know cause unless bullets over-size. I need a .45 Colt 454 bullet sizer. Know of one? The regular one on tool no good, makes them oval. Need a separate one or a base first die for No. three tool. I wrote a note and sent parts to Thomas. Maybeso, send note and picture to RIFLEMAN. I'd like a 260 gr. bullet, same charge as Ideal 255, only longer. Also like the shape of the Winchester 300 gr. for close heavy work, but am afraid of the pressure unless properly resized to .454.

Tried .38 Special in black powder. No good either. Similar to your results in .44 Special.

I firmly believe the .45 Colt S. A. black is superior to anything on heavy game. I did not get as good results on even coyotes with .38-40 as with .45 due to poor penetration from 5 1/2 in. gun factory loads.

Will in a few days send you my right hip pocket holster for 4 3/4 in. S. A. Army. You can use it a few months and copy if you like it. Handle to the front. Put on full suit of clothes with vest, then notice how flat the gun lays, out of sight. The hand does not have to travel near as far to rear, hence makes a less conspicuous movement. Also the gun leaves the pocket much easier, a mere twist of the wrist brings it around. Put your hands in deep in side trouser pocket, then from this position you can slide hand out and slowly grasp gun and have it ready before anyone on left side of you dreamed of it. It is simple to turn body a little. Although different occasions demand different positions. Then try drawing this way and with butt at rear. One advantage in the butt to front draw is you can in many cases where opponent is slightly to the left front and you have hands in pants pockets, get hold of gun without him being any the wiser. Could easily convince you if I could see you, but hard to write it. Anyway try it out. This position also gives you good grip for thumb around hammer spur. For a quick draw from right hip holster on belt. I use tip joint of thumb for slip shooting and faster shooting I curl thumb around hammer.

Take your trigger out of S. A. before trying one handed slip shooting, you just throw gun down using whole arm, like throwing club, and let slip the hammer spur. If trigger is in gun then hold it back at same time or it will break off at top of spoil notches in hammer. You can soon get so you can hit a man up to twenty yards easily this way without any aim and do it just as fast as you can flip your hand and arm, which is faster than the arm will recover from the recoil itself. When the gun recoils I always instinctively hook crook of thumb on hammer spur (and if ordinary shooting) cock the gun as it recovers from recoil. For fast work just throw whole arm down with short snappy motion. Can thus empty a S. A. mightily fast and this is about the only way you can hit anything off a pitching or fast running horse. Don't care a damn for the old two-hand fanning, no good except for noise.

Have seen many old cowpunchers who had no triggers in their S. A. Army's and always shot them with their thumbs, and they could hit any reasonable sized object mighty quick. Ask C. T., he no doubt has seen the same thing. Also if on a bucking horse you must have one hand to pull hard on his head, and a lot of broncs go at it when you start shooting.

I am no good on aerial work. Never tried it. Doubt if I could hit a milk bucket.

Guess you originated that shirt pulling stunt, a good way too, in hot country. Was 118 in shade here day before yesterday.

Thanks for sample 270 Winchester. Sincerely, Elmer Keith.

The Evolution of Accuracy and Range

Part I—From Third Century B. C. to American Civil War

By Major G. P. Wilhelm

THE eyes of the whole world have recently been focused on the word, evolution. In spite of the Tennessee legislature, all things evolve including the art of throwing, commonly known as shooting.

The question most asked of the rifleman by the average citizen is, "How far will a gun shoot and what can you hit?" By this he means, "What is the range of a rifle and what is its accuracy?" Sometimes this question is modified as follows, "How far will this rifle kill?"

I propose to give an historical outline showing insofar as possible the range and accuracy of weapons of the rifle type, including the arm of the individual soldier which preceded the invention of gunpowder.

There is very little information up to very recent times on either the range or accuracy of firearms and their predecessors—the bow, sling, etc. Regarding how far a given weapon will kill, this is a question which will probably never be settled. It all depends upon the part of the body where the missile may strike, it being quite obvious that a wound in the vital portions of the body may be fatal at much greater distances than would otherwise be possible.

Weapons which were able to inflict wounds at a distance were possessed by hunters and fighters long before the age of writing. It is of little importance whether the ancient man could shoot farther or straighter than the modern bushman of Australia. The throwing of stones, just as monkeys sometimes hurl nuts, is the simplest and probably the most ancient method of shooting in the broadest sense. It has been used up until recent times, for instance, the French and English in 1801 at Alexandria and many times in the World War.

Tradition tells us that the ancient slinger by years' practice became highly proficient. The story of David and Goliath is probably based upon historical fact. Slingers were trained from their boyhood up and were required to go without eating during part of their training until they were able to kill game with their stones. The range of the sling was somewhere around 40 to 50 paces—about 45 to 50 yards. The most skillful slingers could hurl their missiles at 10 to 15 paces accurately enough to strike the head of an opponent.

One of the most remarkable weapons ever developed, and one which has maintained its supremacy through a longer period of time than any other weapon including the rifle, is the bow and arrow. Archery has always been a fascinating pastime and would probably be very common today, in view of the modern interest in sports, if it had not been for the spectacular rise in the popularity of

golf. As it is, archery at the present time is practiced to a larger extent than is ordinarily realized.

There were various forms of bows, such as the short bow, which was used by mounted men, the cross bow, which was a mechanically operated bow having a grooved guide for the arrow and a mechanism for drawing the bow and releasing the arrow, and the most celebrated of all, the English longbow.

There are so many legends and traditions mixed up with the feats of the Bowman that it is difficult to tell exactly what could be done. Undoubtedly a skillful archer was a formidable antagonist.

The effective range of the shortbow, as used by horsemen, was from 80 to 100 paces—about 60 to 80 yards. Some nations, however, used shortbows for longer ranges than this—probably 100 to 120 yards. The shortbow was the type used at the Battle of Hastings in 1066 by both the Saxons of England and the invading Normans from France. Of the accuracy of this weapon we have no reliable information, but it is probable that at a range of 100 yards the best trained Bowman could obtain enough hits on a target the size of a man to make life interesting for an opponent.

Along about this same time the crossbow began to obtain favor among medieval armies. The crossbow was the offspring of the ancient engines of war known as catapults. The crossbow required very little training and since the average intelligence during the middle ages was about what we would call a moron, the introduction of a weapon requiring less training was necessary.

There is a lot of argument about which weapon has the superior ballistics—the bow or the crossbow. If we except the longbow, which was used by the English for several centuries, the advantage undoubtedly lies with the crossbow. A comparison between the two would be somewhat as follows:

Skill with the crossbow was most quickly acquired. It had a range at least equal to, if not greater than, the longbow and the missile which it fired was capable of greater penetration. On the other hand, a skillful archer with the bow could fire six times as rapidly as the crossbow.

The range of the crossbow was probably about 200 yards. Its accuracy at that distance must have been very poor. Knowing what a clever man can do with a golf club and ball at 200 yards, it is fair to assume that the crossbow could do at least as well. On that basis, the accuracy of the crossbow can be estimated as a horizontal circle about 10 yards in diameter.

Some of the records of the accuracy and range of the longbow are as follows:

In the 12th Century a Welch archer fired an arrow through an oak door four inches thick, so that the head of the shaft extended the breadth of a hand on the inner side. History does not record what he was shooting at or who was hiding behind the door.

In the days of Henry VIII target practice with the bow was limited to a range of not less than 220 yards and all citizens were required to do a certain amount of firing. In one contest before Edward VI there were 100 archers (the forerunners of the competitors in the Wimbledon) who fired at 200 yards and were able to penetrate an oak plank one inch in thickness, some arrows passing through the plank entirely.

Among the stories told, but not necessarily believed, is the feat of hitting hazel rods at 400 yards. The Sioux Indians who used the shortbow are said to have been able to fire an arrow entirely through a buffalo.

When it comes to rapidity of fire the grand prize must be awarded to the Japanese.

"The Japanese were from their earliest times great archers, and the bow was the weapon par excellence of their soldiers. The standard length of the bow (usually bamboo) was 7 feet, 6 inches, of the arrow 3 feet, 9 inches. Numerous feats of archers were recorded to have taken place in the thirty-three span hall of Kioto and Tokyo, where the archer had to shoot the whole length of a very low corridor, 128 yards long. Wada Daihachi in the 17th Century shot 8133 arrows down the corridor in 24 consecutive hours, averaging 5 shots a minute, and in 1852 a modern archer made 5583 successful shots in 20 hours, or over 4 a minute."—*Encyclopedia Britannica, 11th Edition.*

When it comes to range, however, the Turks without doubt were the blue ribbon winners. Modern archers sometimes fired 400 yards and there are instances of Englishmen with the longbow shooting about 350 yards, but these are no ranges at all compared to the Turks. There is an authentic record that a member of the Turkish Embassy in London before witnesses in 1795 fired 482 yards with the Turkish bow. The Turk used a 12-inch arrow and to compensate for the difference between the draw of the bow and the length of the arrow used a grooved rest on his left arm. There is a great deal of evidence to show that during the 17th and 18th centuries the Turks were able to fire from 600 to 800 yards. Their own records show three ranges of slightly over 800 yards. By their records, I mean that they have left monuments of marble, near Constantinople and located on one of their former archery ranges, with inscriptions in honor of the records made with the bow. It is therefore unreasonable to suppose they

would have gone to all the trouble to erect marble columns with inscriptions commemorating these records unless they had been obtained.

So efficient was the bow that it required five centuries of contest between the gun and the bow before the bow was superseded. Ballistically, the bow would never have been superseded but the noise, the smoke, and the flame of the early guns had such a great moral effect that for psychological reasons the bow was displaced.

Shortly after our Revolutionary War there was a contest in England at a range of 100 yards between the bow and the ordinary British musket, the "Brown Bess," in which the bow placed 16 arrows out of 20 into the target and the musket 12 out of 20. The target is not described but it is presumably the life size figure of a man.

In warfare, the English used the bow up to 1590. Archers were used in civilized warfare until 1807, when 1500 Polish horse archers in chain armor fought against Napoleon. Crossbows were used by the Chinese as late as 1860 at Taku.

Summing up, we therefore find that missile weapons previous to gunpowder increased their range in 2,000 years of development from something under 50 yards to as great as 200 yards for battle purposes and around a half mile in the case of the Turkish bow for extreme range. In accuracy there was probably no increase in the shorter ranges, but at the longer ranges there was undoubtedly a corresponding increase.

When we come to firearms, we find a similar story which is even more striking. The first guns were pitiful. Literally, they could not hit the broad side of a barn. Any child with a stone could throw more accurately and with about as much force but when it came to moral effect the ignorant and superstitious of those days looked upon the gun as a terrible weapon. Some of the more genteel of the people looked upon the use of the gun as unfair and that no gentleman would use it. All classes dreaded it, the armored men most of all because in the course of time heavy bullets began to penetrate their tin plating. Any kind of a gun shot wound was considered fatal. Their recipes for the cure of gun shot wounds were worse than the wounds. For example, "Take of oil and wine equal parts, inject them into a living dog, well boil the animal; its flesh together with the oil, wine, and other ingredients, form the application." —The Gun (Greener).

Three hundred years ago in rainy weather, firearms would not fire and the bows, by reason of wet bow strings, would not shoot. They therefore waited for fair weather. The boys in France would have liked to have waited for fair weather too. Along about the time the Pilgrims were thinking of coming to this country, the French still bitterly opposed the use of firearms. Their opinion was that every man wanted to be a "harquebusier," that it was not quite clear whether a man wanted to be a harquebusier so that

he would get more pay, or because he would have to carry less weight, or perhaps it was because he preferred to fight farther off, but any way the French were quite sure that there ought to be fewer harquebusiers and these good ones, because they had found that many of them were more or less worthless, so that when 10,000 harquebussados (volleys) are shot "there dieth not so much as one man for the harquebusier content themselves with making of a noyse" and therefore shoot at everything in sight and hearing. And they still do.

All forms of early firearms were used, such as pistol battle axes, guns in shape of clubs, pistols made as part of the handle of pistol daggers and spears in the form of muskets. All of these weapons were designed from the point of view of safety first, so that in case of a malfunction, such as failure to fire which invariably occurred, there were other things they could fall back on. The idea was strictly that in case one's enemies were not frightened by the explosion they could either be beaten to death by a club or stuck with a spear or dagger. With regard to range and accuracy, we know nothing of these weapons.

About all that can be said is that they were able to shoot some kind of missile about as far as a sick man could throw a brick. When it came to rapidity of fire, they were not very much improved. At the Battle of Kuisyng in 1636 the slowest soldiers managed to fire seven shots in eight hours (history does not state whether they were working under the 8-hour law) and in 1638 at Wittmergen, musketeers were able to fire seven times in a battle which lasted from noon until dark—about 8 o'clock. Apparently the number seven was as significant then as it is now.

The shooting was done with both eyes open except that when a gun went off both eyes were closed. The guns were held in various positions such as against the chest, hooked over the shoulder, from the hip and supported from the muzzle on a sort of inverted pitchfork arrangement.

Figure 1 shows an historical chart based on an estimate of the effective and extreme ranges of the principal missile weapons of the individual soldier from ancient times until the present. A reference to this chart will show the great superiority of the bow in its ultimate development as compared to the gun in its initial phases.

While we know very little from the records existing of the range and accuracy of the early firearms, yet we have enough ballistic data of modern firearms loaded with light charges and various forms of bullets to enable us to predict within a reasonable approximation the range and accuracy, particularly the range. Without doubt this chart will be criticised severely by various historians, ballisticians, etc. Naturally there is very little reliable data. Anyone's guess may be as good as my own. In making the estimates upon which the chart is based, I have available a great deal of experimental information from the Small Arms Ballistic Station of the Ordnance Department and various records. The chart is presumed to represent an average.

There were no doubt individual instances and weapons which greatly exceeded these figures, also on the question of effective range, there are a great many undetermined factors, for instance, what is effective range? Is it that range at which the bullet will cause a casualty, or is it that range at which effective collective fire, such as a company of infantry or a modern machine gun could probably deliver, considering the tactics, technique of fire of that particular period of history, and also considering the probable stopping power of the missile. I have attempted to consider the probability of hitting and the estimated disabling effect.

In the case of extreme range, I have attempted to estimate the maximum range obtained by the best military weapon of a given period under favorable conditions.

A study of Figure 1 shows the effective range of the bow increasing until in the case of the Turkish bow the effective range was somewhere around three hundred yards. This does not mean necessarily that a Bowman could consistently keep all his arrows on a target the size of a man. However, a body of archers discharging volleys of arrows could undoubtedly make a place untenable at three hundred yards, as it must be remembered that the arrow gives them observed fire just as tracer does the aircraft machine gun.

Another reason for this long effective range is that an expert archer with a bow could fire fourteen arrows a minute.

The effective range of the first guns in so far as material effect is concerned is practically nothing, and in no case is over ten yards. The military value of the early guns does not consist of actual casualties so much as the moral effect on the enemy caused by the discharge of the guns. It was not necessary to kill or wound men because the noise, smoke and the fire issuing from the mysterious contraptions made whole Companies turn and run.

The gun did not equal the bow in actual effective range until the appearance of the Revolutionary rifled musket in the United States, although its moral effect was such as to cause the bow to be relegated to the scrap heap several hundred years earlier.

It is little realized today what a particularly ineffective weapon the gun was up until modern times. In the time of Oliver Cromwell (1599-1658), the British Army was equipped with the match lock musket. In the reign of William the Third (1650-1722) the flint lock was gradually replacing the match lock. It was from this flint lock that the British Army obtained their renowned "Brown Bess," which for a century and a half was their regulation weapon. The muskets borne by the British soldiers in the Napoleonic wars and at Waterloo were not greatly different than the ones their ancestors used under Marlborough at Blenheim and Ramilies over one hundred years earlier. Little was expected of the "Brown Bess" and she did that little well. She was easy to load even when fouled, and beyond her crude lock, there was no mechanism to get out of order. The common soldier looked upon her as a

good handle for a bayonet. Compared with ancient rifles the "Brown Bess" could hold her own as a military weapon.

Of course "Brown Bess" was a smooth bore, as the old muzzle loading rifle, such as our Revolutionary rifle, requiring a tightly fitting spherical ball never was and never could be employed by troops generally, since the force required to push home the bullet rendered its use as a weapon of war impossible, except under special conditions where men were trained by hunting in the use of this type of arm.

"Brown Bess" originally obtained her name from the color of the barrel, as the old match lock muskets, which it superseded, were usually finished with a bright metal barrel.

"Military weapons were allowed to retain their primitive crudeness, whilst the utmost care and ingenuity were exerted to bring sporting guns to perfection. Money and skill were bestowed without stint on a rifle to bring down a deer or on a fowling piece with which a pheasant was to be shot; but any weapon, however clumsy, was thought sufficiently good when the issue of a battle or the fate of an empire was in the balance."

"Nor was this display of apathy confined to England alone. Almost every other nation in Europe concurred in manifesting the same contented indifference. Marmont, to the close of his life, upheld the old musket as the most formidable and effective of all possible weapons; and Napoleon withdrew the rifle from the Imperial troops, to whom it had been partially issued during the wars of the Republic; nor was it restored to the French armies till after the invasion of Algeria, in 1830, when it was adopted for the equipment of the Chasseurs d'Orleans." (From "A Century of Guns.")

However, when it came to accuracy and range, "Brown Bess" was sadly lacking.

One of the earliest tables of fire that we

have available showing the power and range of firearms is given in a book by General Antoni dated 1789. The musket, which was the common type of military weapon in use by all armies at that time, is given a point blank range of two hundred and seventy yards and an extreme range of one thousand three

hundred yards. A celebrated authority in 1814 said, "A soldier's musket, if not exceedingly ill-bored (as many are), will strike the figure of a man at eighty yards; it may even at a hundred; but a soldier must be very unfortunate indeed who shall be wounded by a common musket at one hundred and fifty yards, provided his antagonist aims at him; and, as to firing at a man at two hundred yards with a common musket, you may just as well fire at the moon and have the same hopes of hitting your object. I do maintain and will prove, whenever called on, that no man was ever killed at two hundred yards, by a common soldier's musket, by the person who aimed at him." (From "A Century of Guns.")

As a matter of fact, the first weapon used in the British Army that could be depended on to hit a man at one hundred yards was the Baker rifle, which was used in very limited quantities about 1800. At one hundred yards it made a group of ten shots, providing the gun was perfectly clean, of a little less than two feet wide by three feet high. By 1820 this type of rifle had been improved to the extent that at two hundred yards it could shoot ten shots, when clean,

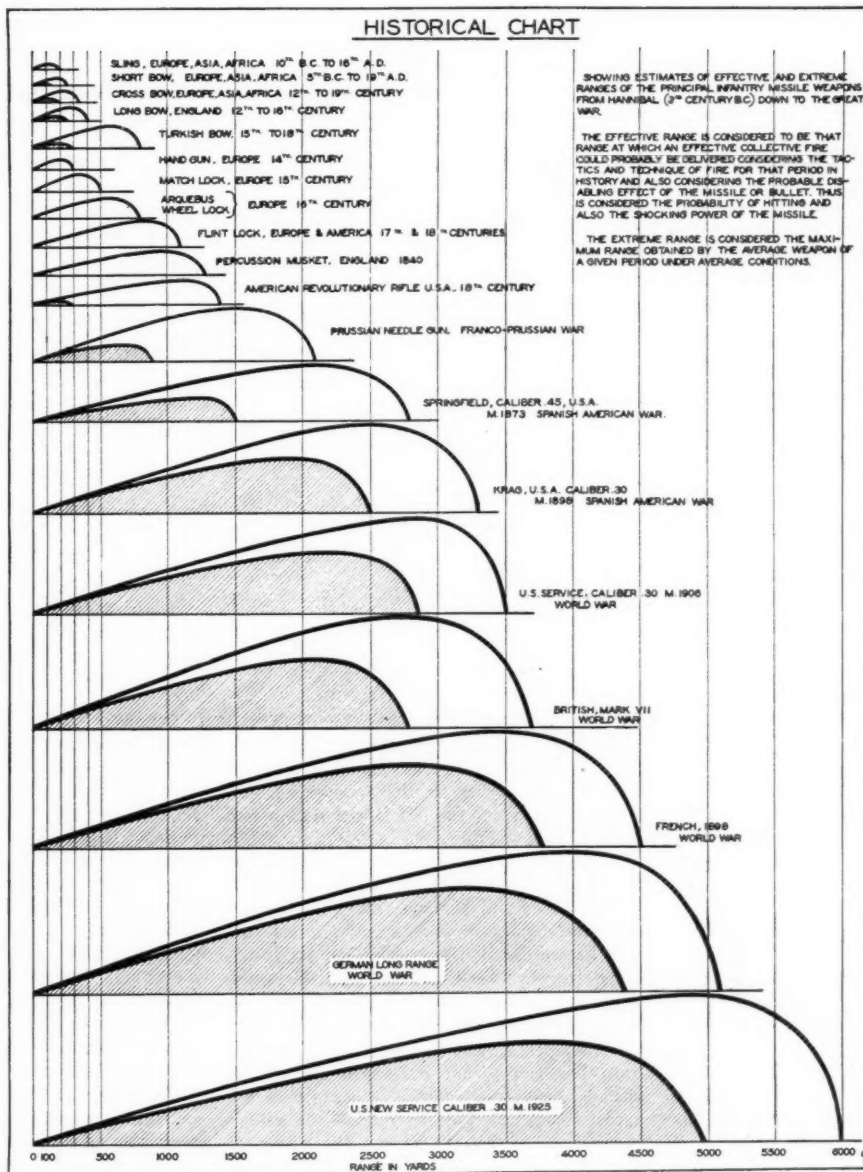


Figure 1.

hundred and forty-eight yards. Both of these figures in my opinion are too great. They sound like the computations of a ballistic expert and they probably are not founded on actual experiment. Point blank for the muskets as used in General Antoni's book must mean something different from what it does now. One hundred years ago fire was rarely opened at anything over one hundred yards, if we except isolated instances with rifled arms such as have occurred during our Revolutionary War and earlier. The average

marksman of that day was considered lucky by some authorities if he hit a single man at thirty yards, a hay stack at fifty, and an entire battalion of troops in column at two hundred yards.

The only real test ever made of the old military type of musket as to accuracy and range was made about 1840 by the British Royal Engineers. This test has been described as follows:

"The Royal Engineers were employed to ascertain and define the real properties or capabilities of the genuine old 'service musket,' which had carried the British soldier through so many fights, and which high military authorities most tenaciously endeavored

to preserve. So a body of officers went to work at Chatham, with all the appliances necessary for the precise establishment of the facts, and this is what they found: They discovered that as to the distance a regulation musket would carry, nothing more certain could be inferred than that it might be one hundred yards, or it might be seven hundred yards, according to the elevation of the piece. At no elevation, however, was there less than one hundred yards' variation in its possible range, and at some elevations this difference exceeded three hundred yards. So much for this primary point. Then came the point of accuracy, on which the revelations were still more astounding. At a distance of one hundred and fifty yards, a target, about twice as high and twice as broad as a man, could, with very careful shooting, be hit three times out of four beyond that distance, notwithstanding that the musket was fired from a stand and every precaution employed to ensure steadiness and success, the result was nil. Nothing could be learnt at all, except that the target could never be hit and the balls could never be found. The mark was made twice as wide as before, but of ten shots at two hundred and fifty yards not one struck." (From "A Century of Guns.")

"After various experiments in vain resorted to to hit such an object at such a range, the officers gave it up in despair; and proceeded to calculate a table of 'instructions to soldiers,' in firing with the musket, some of which will appear strange at the present day. The soldier was told, in firing at a man, at six hundred yards, to fire one hundred and thirty feet above him! Or in other words, if you wish to hit a church door aim at the weathercock. But considering the lateral deviation, the chances were certainly two to one that you would miss the church altogether." (From "The Story of the Guns.")

The British Army made a test with a well trained marksman, using one of the old regulation muskets which were still in use by the British Army as late as the year 1852, consisting of a target eighteen feet square at a range of two hundred yards. It was found impossible to get one hit out of twenty shots.

"In 1834, the Rev. Mr. Forsyth (the inventor of the percussion system) induced the Government to try a number of experiments, in order to test the value of his invention as compared with the old flint lock, and the result of these experiments was as follows: Six thousand rounds were fired from a flint lock musket and a percussion musket, and the experiments were conducted in all weathers, six of each kind of arm being used. The results proved exceedingly favorable to the percussion principle, for out of six thousand rounds from the flint lock there were 922 mis-fires, being one in six and one-half, whereas in the percussion musket there were only thirty-six misses in six thousand rounds or one in 166. The flint musket scored 3,680 hits, the percussion, 4,047. To fire one hundred rounds the flint required thirty-two minutes and thirty-one seconds, and the percussion, thirty minutes and twenty-four seconds." (From "A Century of Guns.")

"Many thousands of the 'Brown Bess' pattern, or regulation muskets, were converted to percussion muskets after the introduction of that system, and many new guns were made of the same pattern, but with percussion locks, between 1840 and 1850. These guns were more evenly bored than the earlier patterns, and, as smooth-bore guns, performed remarkably well. The following table gives the result of a trial between the percussion musket of 1842 pattern and the Minie rifle. Twenty men fired each ten rounds, five in file and five volley firing, against a target six feet high and twenty feet broad."

Distances Yards	Percussion Musket		Minie Rifle	
	No. of Hits	Per cent	No. of Hits	Per cent
100	149	74.5	189	94.5
200	85	42.5	160	80.0
300	32	16.	110	55.
400	9	4.5	105	52.5

HISTORICAL CHART SHOWING INCREASE IN ACCURACY OF MILITARY RIFLES.

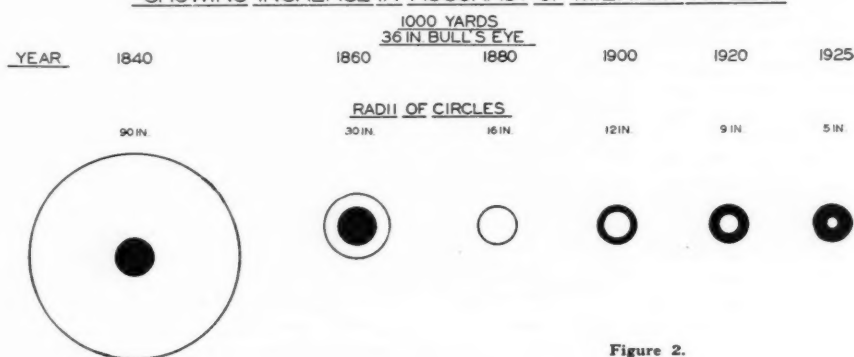


Figure 2.

EACH WHITE CIRCLE HAS A RADIUS EQUAL TO M.R. OF EACH TYPE OF RIFLE.

"It was remarked that whereas the shots that missed the target from the common musket fell from twenty to fifty feet wide of the target, those from the Minie fell within two or three feet.

"Gradually, the antiquated musket came to be regarded with distrust. It was so incorrectly bored, and the windage was so great that the bullets flew wild as they left the barrel. 'Brown Bess,' from being the boast became the bye-word of the British Army. Those who had previously extolled her sturdy endurance began to 'gird at' her infirmities; and disrespectful allusions were made to illustrate her errors and decrepitude. Although officially said to be effective at a range of 200 yards, it was the working rule of the soldier to reserve his shot till he saw the whites of his enemy's eyes, and even then it was said that, before he could bring down his man, he must fire a full weight of his body in lead."

"Nor was there wanting authoritative testimony to sustain this mistrust. At the battle of Salamanca only eight thousand men were put hors de combat, although 3,500,000 cartridges were fired, together with 6,000 cannon balls, (besides which there were charges both of cavalry and the line;) so that, as regards the line, only one shot in 437 took effect. 'An officer engaged at Waterloo says that he could not see more than three or four saddles emptied by the fire of one side of a square of British infantry upon a body of French cav-

alry close to them; yet Bonaparte complimented our men on the superior steadiness of their aim. During the Continental campaigns, he and his marshals held that 450 yards was a safe distance from all small arms, the rifle included.' Colonel Wilford, in the course of a lecture delivered at the United Service Institution, in London, in November 1859, stated that during the Caffre War 80,000 cartridges were fired in a single engagement, in which only twenty-five of the enemy fell."

"An engineer officer, who in one of the great battles of the last war (probably Napoleonic War) had an opportunity of witnessing the effect of musketry upon cavalry charging a square, states that a volley at thirty paces brought down only three men. The French admit that during the Crimean war they fired

away upwards of 25,000,000 cartridges, and certainly did not hit 25,000 men nor kill one-half that number by musketry-fire. 'We believe,' says the Times, writing about that period, that 'the calculation used to be that one bullet in 250 carried death; and that estimate is probably not far from the truth.'" (From "The Story of the Guns.")

Apparently the question of target practice was very little considered. Such practice firing as was done by troops was generally done with blank cartridges to accustom them to the sound and recoil. The Military Guide for Young Officers by Thomas Simes, Esq., published in London in 1774, on page 337 gives the ammunition allowance for the various organizations in the British Army and for each soldier in a regiment of foot there was annually issued 135 powder cartridges but only 20 musket balls, indicating that the so-called exercise consisted of firing blank charges and the question of hitting anything was considered hardly at all.

In connection with muskets, it is quite interesting to note that the old French service regulations and the first Ordnance hand book of the United States Army fixed the life of a musket at fifty years. On this basis the United States musket of the model of 1840 should have still been in service in 1890. This regulation was based upon the experience that a musket barrel will fire 25,000 rounds without becoming unserviceable, and

calculating that, even in time of war, a musket is not fired more than 500 times a year. The wear caused by the firing was small, and the principal cause of the rejection of barrels was a decrease in the diameter of the thickness of the barrel at the breech of nearly one-tenth inch.

The inaccuracy and lack of range of the old smooth bores makes us readily understand the causes leading up to the Braddock massacre.

"When Braddock's thirteen hundred soldiers stood huddled in groups in the forest near Fort Duquesne, and swarms of ambushed savages were shooting them like sheep, the trained soldiers of European battlefields were as helpless as though unarmed. No soldier of the regular army was taught to aim his musket; all that was required of him was to hold his musket horizontally from the shoulder

ica. Of the early American rifles, and their accuracy and range we have ample evidence, as the following quotations will show:

"***Two brothers in the company took a piece of board, five inches broad, and seven inches long, with a bit of white paper, about the size of a dollar, nailed in the center, and while one of them supported this board perpendicularly between his knees, the other, at the distance of upwards of sixty yards, and without any kind of rest, shot eight bullets successfully through the board, and spared a brother's thighs! Another of the company held a barrel stave perpendicularly in his hand, with one edge close to his side, while one of his comrades, at the same distance, and in the manner before mentioned, shot several bullets through it, without any apprehensions of danger on either side. The spectators, appearing

to be amazed at these feats, were told that there were upwards of fifty persons in the company who could do the same thing; that there was not one who could not plug nineteen bullets out of twenty (as they termed it) within an inch of the head of a ten-penny nail; in short, to evince the confidence they possessed in their dexterity at these kinds of arms, some of them proposed to stand with apples on their heads, while others at the same distance undertook

1776, reported: "We are also told that the riflemen had in one day killed ten of a reconnoitering party; and it is added likewise, that they have killed three Field officers. A sentry was killed at 250 yards distance." (From "The Kentucky Rifle").

"These items were promptly republished in the London papers, and excited wrath. In the British camp the riflemen were called "shirt-tail men, with their cursed twisted guns, the most fatal widow-and-orphanmakers in the world." (Drake's "Old Landmarks of Middlesex," 88.) (From "The Kentucky Rifle.")

In the Pennsylvania Gazette of August 21 is the following item from Newport: "A gentleman from the American camp says—Last Wednesday, some riflemen, on Charlestown side, shot an officer of note in the ministerial service, supposed to be Major Small, or Bruce, and killed three men on board a ship at Charlestown ferry, at the distance of full half a mile." (From "The Kentucky Rifle.")

This shows that there was a good deal of ammunition wasted in reckless firing, for the round bullet of half ounce or thereabouts will not carry half that distance with precision, though General Lee probably overdid the matter when he issued to Colonel Thompson the following order: "It is a certain truth, that the enemy entertain a most fortunate apprehension of American riflemen. It is equally certain, that nothing can contribute to diminish this apprehension so infallibly as a frequent ineffectual fire. It is with some concern, therefore, that I am informed that your men have suffered to fire at a most preposterous distance. Upon this principle I must entreat and insist that you consider it as a standing order, that not a man under your command is to fire at a greater distance than an hundred and fifty yards, at the utmost; in short, that they never fire without almost a moral certainty of hitting their object." ("Correspondence of the Revolution," ed. Sparks, II, 501-2). (From "The Kentucky Rifle").

Of course the accuracy and range of the rifle was very much improved over that of the smooth bore. For instance, one of the early American rifles; namely, the Model 1817 regulation rifle, which fired a half ounce spherical ball with a muzzle velocity of 2,000 f.s., was supposed to be able to get about one shot in three on a ten inch bull at 200 yards fired from the shoulder with a rest by an expert rifleman. These rifles were used against the Indians in the Mexican War, and to a certain extent, in the earlier part of the Civil War. Incidentally, both the North and the South used flint lock muskets in the beginning. In 1837, at West Point, a test for penetration was made in white oak. This test shows the musket with a penetration of about 1½ inches as compared to the common rifle of 2 inches and Hall's rifle at a little over an inch. The range was about ten feet.

The evolution of accuracy and range of the gun has been traced down to the time when the great change took place in firearms; i.e., the substitution of percussion ignition for the flint lock; the (Concluded on page 24.)

COMPARATIVE ACCURACY TEST OF BRITISH ENFIELD RIFLE AND WHITWORTH RIFLE

BRITISH ENFIELD RIFLE FIRED WITH A PRITCHELL BULLET
WHITWORTH RIFLE FIRED WITH A MECHANICAL FITTING ELONGATED BULLET

RANGE 500 YARDS
DATE 1857

WHITWORTH RIFLE BORE .45
1 FOOT BULL'S EYE
M.R. 4.5

ENFIELD RIFLE BORE .58
6 FOOT BULL'S EYE
M.R. 27.

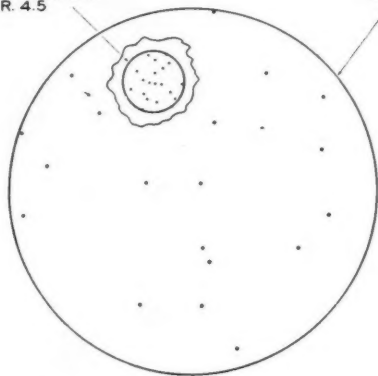


Figure 3.

point it towards the ranks of the enemy, and fire at command. Braddock's soldiers saw no enemy in ranks; an officer, writing of the battle, stated that in the five or six hours while his men were being slaughtered he saw not even one Indian; and the British soldiers, whether firing in volleys or singly, shot only the trees that happened to be before their guns. No soldier's musket would have been useful at the work before it." (From "Our Rifles" in the series "Firearms in American History" by Charles Winthrop Sawyer.)

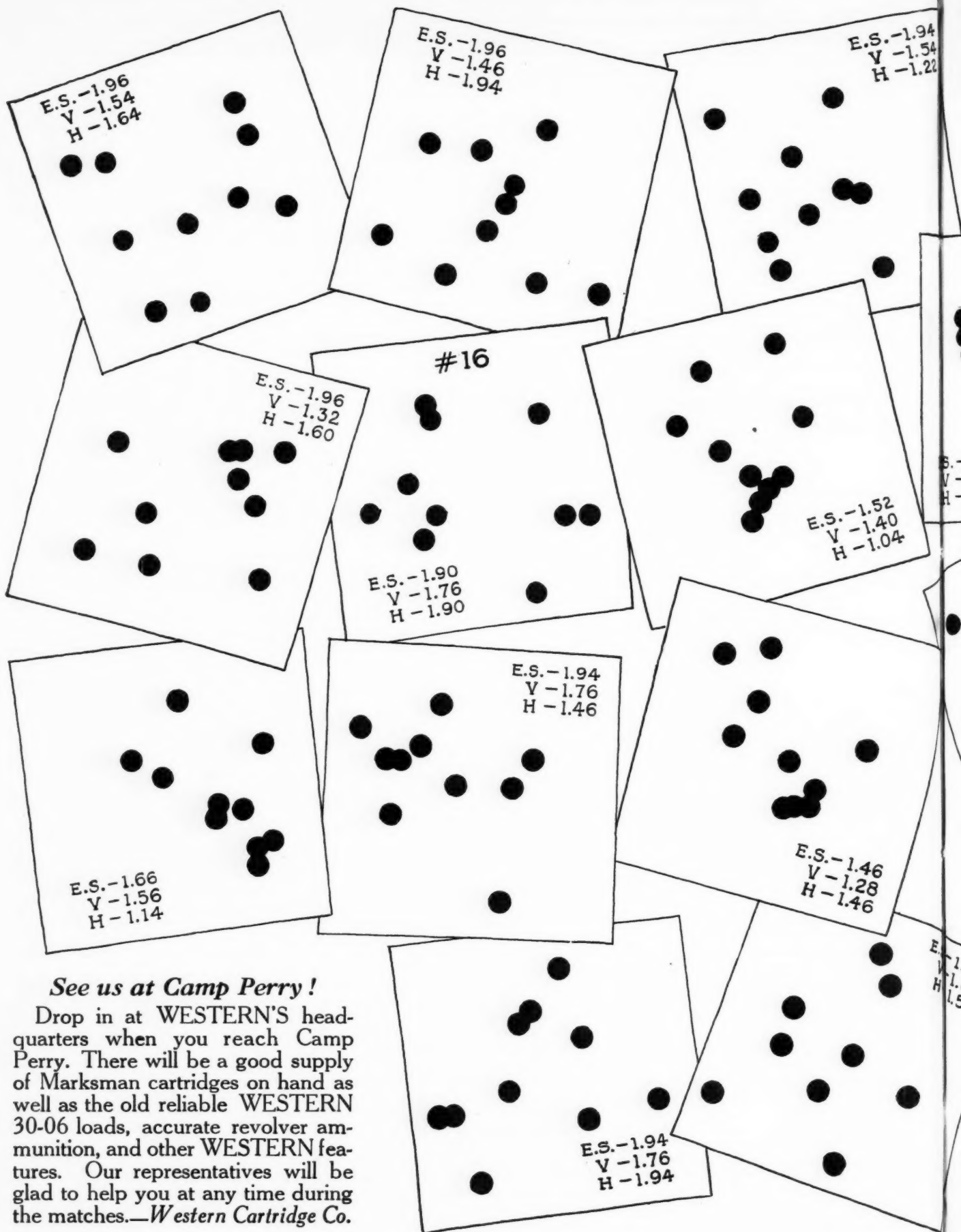
Naturally, Continental soldiers were not taught individual firing because it would have been impossible to obtain any reliable results.

Turning from the smooth bore musket to the rifle, we find that as early as 1611 certain regiments in the Danish Army were equipped with rifles; that in 1795 Napoleon ordered a regiment of light cavalry to discard, as useless, rifles which had just been adopted as standard equipment, as the chief military powers of Europe found the methods of loading the old muzzle loading rifle as impossible in organized warfare.

Up to 1800, therefore, the rifle was not a military weapon in any country except Amer-

ica. Of the early American rifles, and their accuracy and range we have ample evidence, as the following quotations will show: "August. . . . Several companies of riflemen, amounting, it is said, to more than 1400 men, have arrived here from Philadelphia and Maryland, a distance of from 500 to 700 miles. They are remarkably stout and hardy men; many of them exceeding six feet in height. They are dressed in white frocks, or rifle shirts, and round hats. These men are remarkable for the accuracy of their aim, striking a mark with great certainty at 200 yards distance. At a review, a company of them, while on quick advance, fired their balls into objects of seven inches diameter, at the distance of 250 yards. They are now stationed on our lines, and their shot have frequently proved fatal to British officers and soldiers who expose themselves to view, even at more than double the distance of common musket shot." ("Military journal during the American Revolutionary War," 2d ed., 1827, pp.33-4). (From "The Kentucky Rifle").

The Pennsylvania Gazette of August 16,



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Drop in at WESTERN'S headquarters when you reach Camp Perry. There will be a good supply of Marksman cartridges on hand as well as the old reliable WESTERN 30-06 loads, accurate revolver ammunition, and other WESTERN features. Our representatives will be glad to help you at any time during the matches.—*Western Cartridge Co.*

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The groups shown in this advertisement are actual size reproductions picked at random from one day's test firing with recent run Marksman 22 Long Rifle cartridges. They were made on a regular out-door range at 100 yards from machine rest with no correction for wind variation. All of the groups have an extreme spread of less than two inches, which means that the Marksman cartridge will shoot consistently within the 10 ring at all ranges up to 200 yards.

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man as reflected by these targets. Marksman cartridges are carefully inspected following each operation in manufacture, and constant firing tests are carried on to make sure that all cartridges which go out of the factory comply with WESTERN'S rigid accuracy and uniformity requirements.

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E.S.-1.94
V-1.30
H-1.80

E.S.-1.88
V-1.82
H-1.56

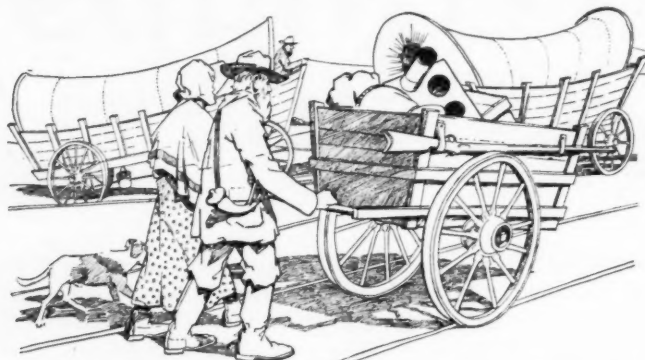
E.S.-1.86
V-1.84
H-1.56

E.S.-1.82
V-1.82
H-1.60

E.S.-1.74
V-1.34
H-1.38

KEY

E.S.—Extreme Spread in inches
V—Vertical in inches.
H—Horizontal in inches.



The American Rifleman

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THE NAUVOO EMIGRANTS. 1847

One of the most amazing "treks," amounting almost to a migration took place in the winter of 1846-47. In character it is without precedent, both in the numbers and in the novelty of the means employed to effect this movement. The unfortunate Mormons seem to have attracted the universal hostility of the people they were thrown with. As a consequence their history prior to their permanent settlement of Utah in 1852, was one of constant removal and change. The winter of 1846-47 found the remnants of those left at Nauvoo again on the road, constantly westward, over the counties of Van Buren, Davis, Appamoose, Decatur and Union, in Iowa; 16,000 men, women, and children, 3,000 wagons and 30,000 head of stock.

It was cold, cold winter with snow flurries and worse—cold and constant downpours of rain. The roads, if any, were impassable. Many of the "wagons" referred to corresponded roughly to our present peddlers' push carts, hauled by hand, entirely hopeless as far as shelters went. For months they "trekked," dying like flies from pneumonia and fatigue.

For fifty years after that grim pilgrimage the route could be marked by the graves of those that perished. And at the finish 400 more died before the year of 1847 was out, as a result of exposure.

THE AMERICAN RIFLEMAN bears no brief for any political party or religious creed. It stands simply for American Citizenship, taught to "ride hard, shoot straight, and speak the truth." Hence, as a corollary, it stands for the right of all reputable citizens to own and bear arms, as guaranteed to them by the Constitution. Conversely,

The Foreign Gunman in American Crime it opposes every influence which attempts to take that right from us and our sons, as a mistaken means of preventing the homicidal crimes.

Therefore, we commend to those legislators who are inclined to favor universally restrictive firearms legislation, a careful reading of Richard Washburn Child's series, "The Great American Scandal," in the *Saturday Evening Post* of August 8 and August 15. The trenchant paragraphs quoted hereafter are taken from the later issue.

The shocking crime tide rises steadily in the United States.

The growth of murder in America to some 11,000 in 1924, the doubling and tripling of burglary and robbery insurance rates, the absurd sentimental protection and pardon of violent and impudent wrongdoers, and our failure to stop crime because we fail to punish it lead directly to an investigation of these, and, indeed, all the causes of our crime tide.

Why is America the criminal's paradise?

Why are we becoming the breeding ground for lawbreakers?

Before it is possible to treat the disease, it is necessary to apply the methods of diagnosis.

* * *

My attempt to find the answer to the question of why we have crime has been confined to finding causes which we can deal with, if we wish, today.

Lacking any sufficient statistical analysis of criminality in the United States, nevertheless it can be shown easily enough that one of the first causes for our crime is immigration. This is the plain statement of a truth often expressed by the more cautious and intellectual phraseology that "while the population of England is homogeneous and law-abiding, our population is heterogeneous and is not law-abiding."

These learned phrases mean nothing more than that we have had drained in upon us in an unselected stream of immigration a vast number of ignorant and vicious newcomers who either do not understand our life and laws or do not want to understand them, and succeed in transmitting that unwillingness even to the children for whom we provide free schools.

This fact, unwelcome as it may be to respectable and useful immigrants, is borne out not only by figures but by the testimony of the hundreds of police officials, judges, wardens, newspaper reporters specializing in crime, and even the criminals themselves with whom I have conversed. It is a fact that goes without argument wherever crime is dealt with intimately. Whenever an analysis is made, there comes confirmation of it. A little after the first three months of 1925 had passed Chicago had had 100 gun killings—more than one a day. Without going into racial analysis of half these killers, it is sufficient to say that 50 per cent of all were committed by two non-American groups, although these two groups are not 7 per cent of the total population.

* * *

IMPORTED TROUBLE MAKERS

I have collected from five American cities the data on 125 persons charged with murder or manslaughter—twenty-five random cases from each city in a specified period. The total of white persons so charged not foreign born or children of foreign born is only twenty. Italian born and the children of Italian immigrants scored twenty-six. Russia furnished nineteen. Various countries of Central and Southern Europe, Greece, Austria, Rumania, Bulgaria, and so on, furnished thirty-five; negroes, thirteen; Ireland, England, Scandinavia, Germany and France and one Oriental country, twelve. If anyone cares to figure out the comparative strength of each element in our population, these figures are immediately convincing.

* * *

A study of the total arrests for felonies—serious crimes in American cities of the character of New York, St. Louis, Detroit, Baltimore, and the like—will show that the native white population, being about 75 per cent of the total, is chargeable with only about 50 per cent of the arrests, although this 75 per cent includes the children of foreign born. Russia, Poland, Italy and Greece are conspicuous examples in which their contribution to the total population is much

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less than their contribution to crime. While the German, Scandinavian and English record is excellent, a country like Lithuania will contribute less than 1 per cent of the population and 2.3 per cent of the felonies. It must become a recognized fact that we have taken in a stream of criminal material from nations where the climate, the racial background or centuries of oppression has provided explosive, passionate or sneaky natures. The individuals come to America with exaggerated ideas of the liberty which awaits them. A total misconception of their escape from old restraints in their native land obsesses them. The only thing the lowest understand is punishment for lawlessness.

We need to do a whole lot more for our immigrants. We probably should teach them the philosophy of ethics and of American institutions; but the first thing to teach them is that lawbreaking brings a swift and heavy hand and then be sure that the hand is swift and heavy.

The distinguished former ambassador to Italy realizes, as we do, that all foreign groups contain many individuals of upright lives, and law abiding tendencies which do justice to American citizenship. Yet, after his wide experience in foreign affairs he has given evidence of crushing weight with regard to the true source of the man killings which so humiliate America. In so doing he has not only revealed the lines along which we seem to need further restrictions in immigration, but has proved beyond peradventure that in our country it is the foreign killer behind the gun, and not the gun itself that is at the root of our troubles.

We have taken Mr. Child at his word and figured out with some care the comparative strength in our population of each of the six groups he mentions, using the 1920 statistics of the Census. Thereupon we are able to arrive at figures which show for each group what may be termed its index of murderous propensity.

Rating the native born white at 1 in his in-born lust for slaughter, an index twice as large must be given to the group embracing Germany, Ireland, England, Scandinavia and France. The negro group gets an index of 3. Russia rates 13, Italy 23, and the group embracing Greece, Austria, Roumania, and Bulgaria, 28. Italy and Russia, however, as single nations, outstrip all others in the amount of killing done proportional to the percentage of our own population made up of their stock.

To be 23 times as murderous as our own kind is going it rather strong, we submit, for people who are allowed the blessed privilege of settling under the American flag. There is something about the situation which reminds one of the gentleman who unwisely warned a viper in his bosom. In such a case the proper play is to get rid of the viper or vipers,—not to deprive the too confiding host of his means of defense.

On the other hand, it is clear that our old native stock are law abiding, sane, slow to anger,—distinctly the sort that are fit to be trusted with weapons. The men who framed the Constitution knew those traits when they took pains to write that the people should not be deprived of the right to own and bear arms. In fact, the more arms that kind of people have the safer is the Government, as it was in the days of the Minute Men.

But there is no place in our midst for vipers of any description, no matter whether they were spawned in Europe or here. We make no distinction of race or creed, and let the chips fall where they may. Out with them! They soil our hearthstone!

Notes from Perry

(Continued from page 1)

against us in a revival of the real Palma. And on the basis of the showing made by the Cubans in the Pan Americans last year there is no certainty that after the Palma of 1925 the Long Range Team Champion of the World will still be remaining in these United States. The Cubans are using the National Match grade Springfield and Frankford 1925 ammunition.

Tryouts for the United States Team will be held during the last week of the School. Major K. K. V. Casey is Team Captain and Major L. W. T. Waller Team Adjutant.

The Service teams maintain their usual non-committal attitude. "Going better than we ever did before." "We may not win but somebody's going to know he has been in a shooting match," etc. The Marines according to reports from Wakefield are going great guns. The Navy has sixteen ensigns who have had a world of competition firing experience in their not so long ago Annapolis days. The Infantry has a bunch of hard holders under capable management and have already found numerous backers. The Engineers, last year's winners, and the Coast Artillery and Cavalry have been "sawing wood." The general impression seems to be that the rifles furnished for this year's matches are just a little bit better than anything that has gone before despite the remarkable accuracy of preceding arms and the rifle shooters of the country already know what the Frankford Arsenal 1925 ammunition is capable of doing.

It appears as though the newspapers of the country are paying more attention to the National Matches this year. It is certain that the Associated Press is carrying lengthy dispatches over its wires. In any case where local papers have failed to publish news from the National Matches inquiry will no doubt bring the information that the dispatches have been received but not published because the local editor did not know that any of his readers were interested. Ask the local sheet for news of what is going on at Perry. Ask often enough and have everybody who is interested repeat the inquiry and the dope will be forthcoming.

It takes several days here in camp for one to begin to appreciate the splendid efficiency of operation that is in effect. For a day or two things seem flat. There is no apparent rush, no excitement whatever but everything is done. Usually it has been done before the need has arisen. Some of the personnel may look a little tired but none of them have put in appearance looking harassed. Colonel A. J. Meyers have never been seen going anywhere in particular but they appear to be every-

where just the same. From the W. J. R. C. to the Service teams the competitors are being satisfied. From the Club House to Camp Headquarters matters are being handled quietly, smoothly and with dispatch. Even the pit details swinging out to a day of hard, disagreeable work behind their regimental band of field music, seem to be imbued with the idea that they are an important part of a big job. A job that needs to be done for the future safety of the Nation and that must be well done for the honor of the Service.

The National Matches 1925 are a guaranteed success before a shot has been fired in competition.

A Way to Weigh

(Continued from page 10)

The outfit is mounted on a heavy walnut base to which I have screwed a ten-cent spiral level, and gives me very satisfactory service, always being within 1-10 grain when checked against laboratory balance.

I have purposely omitted the dimensions, as they may be whatever you please, but the longer the beam the more sensitive the balance will be.

The Reversed Pistol

By Hans Roedder

A rather startling design, a "tractor type" one hand arm, was described by Mr. Thos. C. Harris in the issue of August 1st of this paper. The idea is not entirely new, for pistols of T form have been produced by European makers for some time past. Mr. Harris went to the extreme, literally, to attain that elusive thing, a pistol that will point steadily, when muscles and nerves fail.

The above mentioned foreign arms have their grips attached at, or forward of, the point of balance. They feel fine and steady in the hand, but none of them have shown any superiority over the orthodox forms in performance. In the hands of a man in physical training, a slightly muzzle heavy pistol, with a stock of enough slant to tense the forearm muscles, will do the most consistent work.

On the face of it, the conclusion that movements of the muzzle alone determine lack of accuracy appears valid. There are four factors, at least, which produce these movements: First the natural sway of the entire body, second the pivotal movements of shoulder- and wrist-joints, third, the tremors set up by the heart action, and fourth, the vibrations due to hammer blow, etc.

None of these are eliminated in this novel type of pistol. They remain the same or at least are transferred from the muzzle to the breech end for their greatest manifestations. It stands to reason that the result on the target will be the same whether the breech is stationary and the muzzle moves, or the muzzle remains steady and breech "shimmies." Harry Pope once remarked: "The bullet starts at the breech, and don't you forget it!"

Evolution of Accuracy, Range

(Continued from page 19)

general use of rifled arms for military use; the use of elongated bullet instead of a spherical one; and the change from the old muzzle to the breech loader. From the decade ending in 1850, we have fairly trustworthy data on accuracy, the great increases being made every generation from 1840 on in the accuracy of military rifles is evidenced in Figure II. The black bull's-eyes in every case represent the present standard 36-inch bull at 1,000 yards. Previous to 1840 it is quite evident that up to 100 yards, the very best military rifled musket would do well to place as many as five shots in a bull's-eye 5 inches in diameter.

The British text book of small arms in 1909 states the capacity of the military rifle to shoot accurately did not, until recent years, correspond with a degree of accuracy to that of which the human hands and eyes were capable. With special heavy target rifles this was not true, as, even in the days of Washington, it was said that the best marksmen could put three out of five shots on a sheet of paper about eight inches by ten inches at eighty rods (about 400 yards).

Figure II will probably create a lot of adverse comment. It will be advocated by some, that military rifles were more accurate; others will say that they were not anyway near as accurate as these figures indicate, while others will say, in some cases, the figures are too small and others too large. The first class will be referring to special rifles and ammunition or the freak groups. The second class will have in mind average rifles and ammunition fired by an average marksman, while the third class will probably cite individual examples to prove their point.

My answer to such criticisms is that this chart does not refer to any specific rifle or ammunition, or any particular year, but refers to a period of time. It is also based upon the best possible ten-shot group which could probably be made with selected military rifles and ammunition fired under test conditions.

The chart shows mean radius. The diameter of the bull's-eye which would contain all of these shots is over three times the size indicated by the figures i.e., the 90 inch mean radius of the 1840 group becomes a 300 inch group diameter, while the remaining figures are as follows:

1860, 30 inch mean radius corresponds to about a 100 inch group diameter;

1880, 16 inch mean radius corresponds to about a 55 inch group diameter;

1900, 12 inch mean radius corresponds to about a 40 inch group diameter;

1920, 9 inch mean radius corresponds to about a 30 inch group diameter; while in

1925, 5 inch mean radius corresponds to about a 17 inch group diameter.

Can anyone successfully maintain that a single group of ten shots cannot be made within these dimensions under the conditions outlined? These figures should not be compared with a test in which a great many targets are fired, unless it is compared to the best targets which are obtained in such a test and not to the average targets.

The new breech loaders were very inaccurate. Skill was put on the mechanism but not on the barrel. It is interesting to note that while the old "Brown Bess" musket lasted 150 years, the percussion principle was discovered, reached its zenith and became obsolete in 50 years. Its predecessor, the flint lock, lasted about 200 years. The first percussion rifle in the United States Army was the Model 1841. It was the last of all our flint lock military arms. The last of the smooth bore flint locks were finished in 1842.

"The Model 1841 was noteworthy also for being the best made and most accurate spherical bullet military rifle in the world all nations so acknowledged it, and it so remained until the spherical bullet was superseded by the conical one then the boring and grooving of the barrel had to be revised to meet the new conditions and the model was superseded by a new one. Its supremacy lasted for 14 years. During that time the government works at Springfield and Harpers Ferry produced several thousand, and several thousand more were made by contractors Whitney, Tryon, Remington, and Robbins & Lawrence. These contract arms were mostly turned over to the states for militia use."

"By civilians, the Model 1841 was considerably used for big game and Indian shooting in the Far West. Its accuracy and shocking power so strongly recommended it that it was nicknamed 'yerger,' dialect for Jager, hunter. By military men it was variously called 'Harpers Ferry Rifle,' 'Mississippi Rifle,' and, later and erroneously, 'Model 1842 Rifle.' This last was from the year the percussion system became official."

"Between 1849 and 1855 conical, hollow base bullets were issued for trial with these rifles. The bullet grooves were filled with a mixture of beeswax and tallow. The powder charge was 50 grains. Besides the 390 grain bullets, 417 grain ones were also tried, like the 390 grain ones outside, but having the base cavity conical."

"This rifle, at 100 yards, in the hands of a good shot, and not using service ammunition but using bullets with loose patches, was probably capable of making an occasional ten-shot string in a 4-inch circle. The penetration with service ammunition at 100 yards was through eight inches of soft pine." (From "Our Rifles" in the series "Firearms in American History" by Charles Winthrop Sawyer.)

During this transition period we get an idea of the accuracy of the musket and the rifle. As a result of a competitive test, the musket out of 200 shots at 400 yards obtained seven hits, while the rifle obtained seventy hits, at 500 yards out of 200 shots the musket got thirty-three hits against twenty-five hits out of 200 shots at 600 yards with the rifle. The rifle used an elongated ball. This test was fired in 1844. In 1859, using a disc bullet in a rifle, it was possible to obtain 70 per cent hits in a space two feet by four feet at 600 yards.

One of the most carefully conducted tests was the one between the Whitworth rifle and the Enfield musket in England a few years before the Civil War.

"The Whitworth rifle was first formally tried in competition with the best Enfield muskets at Hythe, in April 1857, in the presence of the Minister of War, and a large assemblage of the most experienced officers, including among others the Superintendent of the Enfield factory, and General Hay, the Chief of the School of Musketry for the Army. The success was surprising in range and precision it excelled the Government musket three to one. At 800 yards its superiority was as one to four, a proportion which it maintained at 1,000 yards and upwards. At 1,400 yards the Enfield shot so wildly that the record ceased to be kept and at 1,800 yards the trials with it ceased altogether, while the Whitworth continued to exhibit its accuracy as before." (See Fig. III.)

"A contemporary writer summing up the results of these early trials says, at the time Mr. Whitworth commenced his experiments 'it was deemed first-rate workmanship in a rifle, if the deviation from accuracy in the barrel did not exceed one in three hundred; Mr. Whitworth reduced it to one in ten thousand.' In point of accuracy and range, the advantage of the old rifle over 'Brown Bess' was more than five to two, the advantage of the Whitworth rifle is at fifty to one over the old rifle. Its combined improvements give a more correct range than the Minie, and one-half further with one-third less gunpowder. The extreme range of the Minie is 1,400 yards, but the range of the Whitworth is 2,000. On careful trials at 500 yards' distance, the accuracy of shooting of the English Whitworth is more than ten to one compared with the best French Minies now made. This allusion to the Minies refers to the competitive trials at Vincennes in 1860, when the Whitworth rifle was ordered by the Emperor to be tried against the best pieces that France could then produce. At a range of 500 meters the former was victorious in the proportion of three to one; at 700 meters the French retired from the contest: while up to 1,000 the Whitworth continued to make accurate shooting." (From "The Story of the Guns.")

The following table exhibits the official return of results:

Description of Rifle	Distance in Yards	Angle of Elevation	Mean Radius Feet	Remarks
Enfield	500	1° 32'	2.24	
Whitworth	500	1° 15'	.37	
Enfield	800	2° 45'	4.20	
Whitworth	800	2° 22'	1.00	
Enfield	1,000	4° 12'	8.00	
Whitworth	1,000	3° 8'	2.62	
Enfield	1,400	--	--	Shooting so wild no diagram taken
Whitworth	1,400	5° 0'	4.62	
Enfield	1,800	--	--	
Whitworth	1,800	6° 40'	11.62	Not tried

The trials above alluded to took place from a fixed rest: the following day General Hay with a Whitworth rifle fired from the shoulder, and made a target of fifteen inches at 800 yards; that is to say, from that range all his shot told within that mean distance of the center. The range was then increased to 1,000 yards, when the practice he made was equally good.

Figure III is a comparison of the targets obtained with these two weapons at a range of 500 yards. In connection with the Whitworth rifle, it is interesting to note that there was difficulty among the old gunsmiths in

working to one-sixteenth inch, while the Whitworth rifle was made with certain dimensions to one one-thousandth inch.

The great superiority of the Whitworth rifle, which, however, was not suitable for a military rifle, consisted in an improved system of rifling, including a twist four times greater than the Enfield; a decrease in the diameter of the bore of 20 per cent; an elongated projectile with a mechanical fit; and refined processes of manufacture.

As long ago as 1860, special experimental rifles were made, such as the one designed by General Jacobs, with which it was claimed

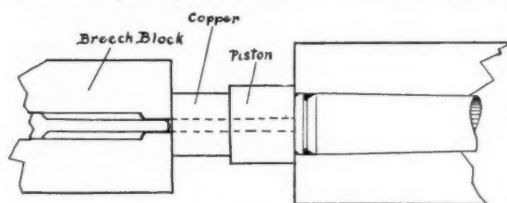


Figure 8

that a man sized target at 1,000 yards could be struck one time out of three, and that the effective range was fully 2,000 yards.

At a competition held at Zurich, Switzerland in 1860, the winner of a match made one hundred and fifty three bull's-eyes in one day at a range of 200 yards, the bull's-eyes measuring two and one-half inches in diameter. This score is phenomenal now, and it can only be imagined with what skepticism it was received at that time. The Swiss are great rifle shots as our International Rifle Team of 1925 can testify.

(To be concluded in the following issue.)

Pressures

(Continued from page 5.)

A comparison of the maximum pressure obtained by some of the loading companies

cartridges to several places for test would only have needed one figure and a flock of ditto marks to record the result.

Just to show that there are worse systems of taking pressures than the one we use, just give the British "base" or "oil case" system the once over.

Figure 7 tells most of the story. The British guns have no pistons, at least not in the sense that ours have. The cartridge is supported at the base by a steel cylinder that might be called a piston, which has a hole through its center. The copper is about the size of the shell head and it also has a hole through the center. It will be noticed from the diagram that it lies in back of the piston and the holes in the copper and piston line up to permit the passage of the firing pin. The breech block or bolt acts as the anvil.

Cases are dipped in light oil and drained before loading into the gun. This is to provide lubricant and prevent their clinging to the chamber walls when fired and to permit the shell to recoil against the copper. The contracts for 303 British ammunition that were placed here during the War specified that pressures

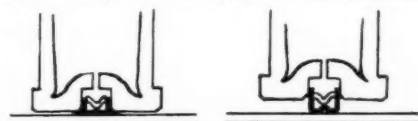


Figure 9

be taken this way, but I have a notion that our manufacturers sneaked around the corner once in a while and fired a few shots in their own pressure guns to find out where they were at.

You have heard plenty about punk war time cartridge brass, well it didn't all go into .30-'06 cases. The British got some, too. Under the "base" system, a soft case is very detrimental, as the pressure will compress the

in the brass of a cartridge case during the various drawing and annealing operations of its manufacture and this is probably the weakest point of the "base" system, in that it uses the cartridge case in an important capacity, while cartridge cases are not manufactured sufficiently uniform in dimensions, nor are they sufficiently uniform in structure to perform this function satisfactorily. Their coppers, too, being made from larger rods than ours are more liable to have irregularities or hard streaks in them. It is interesting to note that in this system, oil is used on the cartridge cases to get the maximum amount of thrust to the rear, which is the reason why it is no longer considered healthy to grease Springfield bullets lest the grease get into the chamber and cause the cartridge case to set back and strain the bolt.

The next "system" that we have to consider is that used by most hand-loaders. This consists of guessing at the pressure by the appearance of the primer. Primers are notorious for their lack of uniformity in thickness and kind or temper of metal. The way they fit in the primer pocket of the cartridge case has about as much to do with the way they flatten as anything else. For instance, in a revolver there is usually a fair amount of space between the head of the cartridge case and the recoil plate. See Figure 8. If a primer happens to fit its pocket a little looser than it should, the primer will be driven back against the recoil plate before the head of the shell and when the shell does come back, it is at such speed that the primer has not time to find its original seat so is pressed out flat making a rim around the primer. This also occurs in some rifles using rimmed shells to a lesser extent. The action is very similar to the bunting operation used in putting the head on rim fire shells during their manufacture. Primers usually deteriorate and become soft from long storage. Brass primers will usually stand a lot more pressure before flattening than copper primers will. None of them are designed nor manufactured in such a way as to be accurate enough to base any close comparisons on pressures by the way they flatten. Flattened primers should always be heeded as an indication of high pressure, but this does not mean that the flat primer proves that the pressure is high. It is just a sort of safety valve for the shooter.

In this "system," there is no basis for comparison nor can any numerical value be obtained that is comparable with the safety factor of the gun. Perhaps the best way to apply this method is to use new primed shells, firing a few loads on which the pressures are definitely known and examining closely the effect of this load on the primers. Then when increased loads are fired or different powders used, the primers can be compared for flatness with those fired with a load of known pressure. Unsought advice is often no good, but my advice to hand-loaders using maximum loads is find out where they are on pressure by using a pressure gun. If you haven't one, "ask the man who owns one," or keep close to normal or recommended loads.

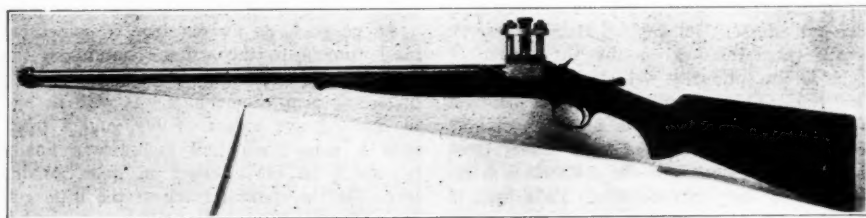


Figure 10. A simple type of pressure gun designed for the taking of shotgun pressures.

and the mean pressure obtained by the Ammunition Board on the same lots will show a difference of nearly 10,000 lbs., in some cases. No doubt the Board's minimum figures would show a still greater difference, yet who of us would let these differences in figures weigh heavily on us if we were in close proximity to several cases of this stuff and a push cart with no one looking? If you happen to have been at Caldwell in 1919 you don't even have to use your imagination.

If all coppers and pressure guns were exactly alike and all ammunition behaved the same internally just because it was of the same loading, Mr. What's-his-name that sent

head of the case as well as the copper. Of course, the head of any case will be compressed some, but a soft one will result in more compression of the case and less compression of the copper. Ballistic cartridges are used to make corrections for soft cases, that is, these cartridges are manufactured to very close dimensions of specially selected brass and are very carefully hand loaded. The figures obtained with them, at a given temperature, are used as standard. Corrections could be made pretty accurately for soft cases that were loaded the same and fired under the same conditions if cases were uniform, but there are all kinds of stresses set up

Trial of the "Super Thirty"

(Continued from page 6.)

a thing of the past, for there can be no exaggerating the boon which would thus be conferred on sportsmen.

The particular rifle which we tested was a Mauser actioned magazine rifle fitted with a twenty-six inch barrel. It weighed but seven pounds and twelve ounces, and its general handiness, lines and balance were all that the most fastidious could desire, while the workmanship was of that high order which is invariably associated with the name of Holland and Holland. As has already been explained three different weights of bullet can be used, but these different bullets require different sighting. It might be possible to use one sight for, say, the 150-grain bullet for long range work, and the 220-grain bullet for close quarters against heavy game but we would not consider such an argument satisfactory, and although it might answer fairly well in one barrel it would not necessarily follow that another barrel would prove so amenable. The flip of the barrel is really the deciding factor and this will vary in degree with each individual barrel. Consequently it would be unsafe to rely on such a system of sighting as a standard, and it is far better to adopt the course which Messrs. Holland and Holland have taken and to have different sight leaves for different bullets. We cannot imagine any sportsman wishing to use all three bullets in one rifle. The 150-grain 180-grain bullets would fulfil similar functions, one having a higher muzzle velocity than the other. In Africa probably the 180-grain bullet would be the better, while for deer stalking or the Himalayas the 150-grain bullet would be preferable. In both cases the heavy 220-grain bullet would make a most useful standby and would prove an excellent bullet against heavy non-dangerous game in bush or scrub where long shots would seldom be necessary.

At the same time even two sight leaves on a rifle offer a chance of error, although no more so than the number of leaves for different ranges which are so frequently seen on sporting rifles. If the leaves are clearly marked and the sportsman takes ordinary care there should be no serious risk of any mistake.

The pressure tests were carried out in strict accordance with the specifications decided upon at the Field Pressure Conference which was held last year, and the following were the mean results obtained.

Charge	Bullet	Pressure
54 grains M. D. T. Cordite	150 grains.	19.0 tons
50 grains M. D. T. Cordite	180 grains.	18.4 tons
45 grains M. D. T. Cordite	220 grains.	18.5 tons

These pressures are most satisfactory and decidedly on the low side when the high muzzle velocities are remembered.

The velocities were all taken from a twenty-eight inch barrel over 180 feet. The corresponding muzzle velocity being calculated in each case with the new Hodstock ballistic tables which undoubtedly give results very near the real truth. The actual results were as under.

Cartridge: 54 grains M. D. T. cordite and 150-grain pointed bullet.

	Observed Velocity
Round No. 1	3032 f.s.
Round No. 2	3018 f.s.
Round No. 3	3023 f.s.
Round No. 4	2978 f.s.
Round No. 5	3021 f.s.
Round Mean	3013 f.s.
Corresponding Muzzle Velocity	3094 f.s.

Cartridge: 50 grains M. D. T. cordite and 180-grain pointed bullet.

	Observed Velocity
Round No. 1	2734 f.s.
Round No. 2	2736 f.s.
Round No. 3	2722 f.s.
Round No. 4	2732 f.s.
Round No. 5	2718 f.s.
Round Mean	2728 f.s.
Corresponding Muzzle Velocity	2790 f.s.

Cartridge: 45 grains M. D. T. cordite and 220-grain blunt nosed bullet.

	Observed Velocity
Round No. 1	2306 f.s.
Round No. 2	2292 f.s.
Round No. 3	2302 f.s.
Round No. 4	2300 f.s.
Round No. 5	2324 f.s.
Round Mean	2305 f.s.
Corresponding Muzzle Velocity	2350 f.s.

These results can only be considered as highly satisfactory, no matter whether they are regarded from the point of view of regularity or the actual high speeds attained, and we think that Messrs. Holland and Holland will be perfectly justified in claiming muzzle velocities of 3,100, 2,800, and 2,350 f.s. for the 150, 180 and 220-grain bullets respectively.

The muzzle velocities developed with the two lighter bullets can only result in extreme flatness of trajectory with all the additional advantages of the elimination of the difficulty of judging distance. But such ballistics are of no use unless combined with accuracy of the highest order, for a flat trajectory will not help sportsmen unless the rifle is also capable of grouping into a small area. In order to test the accuracy the rifle was shot at 100 yards with open sights, the ordinary muzzle and elbow rest being used. The accompanying series of five-shot groups were obtained thus with the three different bullets, the diagrams being reproduced the exact size.

There can be no doubt that the standard of accuracy achieved is a phenomenally high one and Messrs. Holland and Holland deserve every congratulation on the production of such an exceptionally well designed cartridge and rifle. This rifle will take a place between the .375 Magnum, which is a weapon capable of dealing with ponderous game under most ordinary conditions, and the .240 which is essentially a deer stalker's rifle. It is light in weight and there was no appreciable recoil, and consequently it should make a strong appeal to a very wide range of sportsmen.

Although we were only shown a single magazine action rifle, we understand that Messrs. Holland are prepared to build double rifles to take a similar rimmed cartridge.

Incidentally we may mention that the rifle we tested fitted with an improved form of the ordinary hinged foresight protector which makes a very nice finishing touch to a weapon which has been aptly christened the "Super Thirty Rifle."

Editor's Note. The article presented herewith is reprinted from the June 11 issue of the British "Field." We feel sure it will be of vital interest to our readers. In analysing

the ballistic figures and comparing them with results obtained with American components we caution the reader that cordite powder was used and that the pressures were undoubtedly taken by the British "base," or oiled case system. In converting the pressure figures to lbs. per square inch remember that the British still use the long ton.

High vs. Low Power Rifles

(Continued from page 2.)

head that was an eye-opener and I began to wonder if the "chain lightning" was there with the goods at long range.

A little later a buck deer came under my eye but saw or scented me before I saw him. The little gun leaped into line and cracked as Mr. Buck showed between two trees a short distance away. One shot was all that could be sent but no deer was found when the place he was in was reached. Blood, however, was found and this was followed up for a mile or more to a spot where the buck was discovered stone dead. The bullet had entered a little too far to the rear and gone completely through, making a 1½ inch hole at its exit. The buck did not seem to mind the bullet at first but so much havoc had been wrought in its insides that internal hemorrhages finished the job.

A thorough review of that year's results as they were carefully gone over during the following winter's fireside reveries could but eject interrogation points as to the game getting qualities of the little 250 and however much the ha! ha! of my old side partner was dreaded when our duffle for the next fall's trip was packed the old 45 was found tucked in beside the 250. To the inquiry why I was taking along that "obsolete cannon" my reply was, to be lent to him when his old gas pipe broke down.

To go back on an old love is something most foreign to the writer's nature so the first morning out found the little 250 nestled under my arm. Some luck was with us and to the seductive means of my guide's birch bark a magnificent bull moose was finally persuaded to break cover in quest of his love. At the spiteful crack of the little gun Mr. Moose changed his mind but another messenger met his opposite side before he could regain his cover. Well sir, a smoke screen was put up then and there but not much comfort was added the unhappy writer's feelings at the derisive remark of the guide, "What can you expect with a bean blower." When camp was reached that night that gun was carefully cleaned and packed away amid the sly winks and occasional laughs and remarks of the boys and the old 45 brought out and prepared for the morrow.

Several days passed before another chance at a head shaping up to my ideals was again seen but our patient quest was finally rewarded by one almost the equal of the first. At the roar of the old cannon trouble was very evident in Mr. Bull's family and only

a few steps were taken when he went down all in a heap. The guide's long drawn out "oh" expressed a good deal. The result of that shot was in marked contrast to that of the 250 for to judge by the sound unless that first bull had butted into an iceberg up north of Labrador somewhere I will bet that he is still going.

There is no gainsaying the fact that the modern high power gun in light weight ease of carrying, balance, and feel has got it all over the old black powder or low pressure guns, when you come right down to its reliability when shooting in woods and among small twigs and brush where the shot, if had at all, must be driven through these with no time to pick a clear open spot if one is to be had; when you also consider the havoc one of those high velocity bullets makes in the flesh of game when hitting certain spots, then the question is raised in one's mind, Is the high velocity gun the one for woods shooting?

The conclusion forced upon the writer from some years of game shooting is that the high power gun has its place, but for large game in thick woods where shooting of necessity must be at short range, the large calibers with heavy bullets should be used. For open country long range shooting the 1906, 180 gr. open point bullets seem to offer a very fine compromise for it has the range, mushrooms well, at long range, giving nearly the effect of the large bores, and is but slightly affected by the wind.

Lots of the others are excellent guns and will do the work but the writer's advice is, whatever gun you select don't get the light lead high velocity stuff for it must be remembered that as soon as this bullet loses some of its velocity its explosive, mushrooming qualities are gone and especially if it is a small bore will slip into or through the game which will die a lingering death in some jungle or inaccessible crevice a total loss to mankind. This useless slaughter and waste of our only too evident fast diminishing wild game is a most deplorable condition today facing the American sportsmen and to all true lovers of the greatest, and most life giving sport bequeathed us by our Creator to stop, or at least reduce to the minimum this waste of our heritage, should be the primary object of all true lovers of the finest privilege bequeathed to man.

The writer has spent over thirty years at this game and has gone through the list from the early .44-40 black powder gun to the .250-3000 speedster. For openshooting like the mountains and plains of the West or the bogs of Newfoundland high velocity long range guns without question have the call but when you come to the woods shooting where twigs, brush, and limb stand ready to mutilate and deflect the fast bullet, then it becomes a question if the slow velocity lead bullet will not do the work more surely and better. What do you think about it boys? Let us know what your experience has been!

Deer

(Continued from page 12.)

the next buck I saw with my .22 Colt pistol, regardless of consequences.

That morning I chased a red fox out of township 33, Range 54 and part way across Range 55. Going back to camp my course took me by a patch of she oaks and I jumped a white tail buck with a five point head. He ran directly across my path, just like a black cat does, and I introduced into the record Exhibit "A" in the form of a .22 Colt pistol with U. S. N. R. A. .22 long rifle ammunition. I was shooting at his heart at 40 yards. I fired twice and he went down, but came up and acted like he was badly hurt, but it may have been just his feelings. I realized that it was time for me to cut out my foolishness and finish him up with the Krag carbine with bullet point filed off so as to just show a pencil point of lead. I cut his heart half in two, the lower part being shot off. He went down again but got up and ran. He went straight away, so I did not want to spoil the meat, and thinking of dressing him out later, I ran along behind keeping him in sight. He ran 82 yards before dropping dead. The two .22 bullets went through his lungs about one and a half inches apart, and when I skinned out the deer the bullets dropped out of the hide on the opposite side. A .22 bullet will kill a deer, but it is foolishness to shoot a deer with one, my own favorable experience was the result of being disgusted with my poor shooting with the rifle. If it had not been for the Krag carbine, the deer would probably have died a mile from there, and been lost.

I now had the joke on Noel, for he has made his possibles on the indoor range, and fine scores at 1000 yards. These thousand yard experts, with distance, wind, and mirage known, and firing a shot a minute, often have a grand surprise on deer that jump from a patch of low underbrush, give a flash of the tail and are gone. There is a thump, thump, thump of the feet as the deer jumps stiff legged and all is silent, although often the white tail will stop at about 100 yards, give a whistle, and is gone forever. The black tail will give a snort when he reaches the top of the hogback across the canon, and the expert will wonder how he got away before he got in his sighting shots. The deer may be surprised but the expert will be astonished.

The third day, Ira and Bob stayed in camp while we went out. We did not see anything but does until about noon when a buck came over the cap rock and stopped under the spreading limb of a low cedar tree at 50 yards. The outline was lost, although the side of the deer could still be seen. The side of yellow matched fairly well with the yellow limb and trunk of the tree. Noel accepted the standing shot and squeezed the trigger. The deer was gone instantly, but reappeared 100 yards farther up the hogback, and two more shots followed from Noel's long Krag. We failed to find any signs of a hit, so left to hunt another high point of rocks.

Noel took my carbine while I took his long gun and followed the contour as he went over the top, and Ethan went around the other side. Noel jumped his buck at 25 yards and knocked him down, a hole through the lungs. He called me and told me he had his buck, so I started up the hill. I had gone about 100 yards when the shooting commenced again. After being down about two minutes, the deer got up and was off. He came my way, so I joined in on the chorus with the Long Tom. One was using Newton bullets, the other the Western Hollow Point. We will never agree as to who made the hits, for we got the deer after a foot race of 700 yards. Shooting and out of breath on this skirmish run, we managed to put in three more body hits. All the bullets came out with holes about the size they went in. The deer was badly torn up inside. It died almost at the bottom of the canon, and it was noon the next day when we got it into camp, and many were the statements as to what they thought of a man who would run his deer to the bottom of the canon before killing it.

While Ethan was rounding up his buck the last day of the season, as he came around a cedar tree he found himself looking into the business end of a rifle, and a trembling voice told him that he almost shot him for a deer. The humorist of our party replied with the question, "You don't see any horns do you?"

Ethan got his buck with an old style Winchester .44-40 at from 10 to 120 yards. He was watching a runaway, as only a man can who has murder in his heart. He said that two buck came through the gap in the rocks and his first shot at about 30 feet was a miss, and the deer stopped still for the second shot. It entered from above and near the backbone coming out low on the other side, near the heart. Three other bullets fired into the buck as he ran all failed to go through, but they flattened out in nice shape. I was surprised at his old gun, for I have seen them killed with .30-30 rifles that did no more effective work. Even the .30-40 often fails to get through.

In my estimation the Krag is a better hunting rifle than the Springfield. One difference, if no other is sufficient to make me select the Krag. The safety on the Krag can be turned straight up, and the bolt is locked shut, a slight push of the thumb and you are ready for deer, rabbits or coyote on full run. In the same position on the Springfield the bolt will raise and as the game runs away you have to see if the bolt is down, throw off the safety, and the game is gone. If the Springfield safety is turned clear over, it locks the bolt, but is entirely too hard to throw over for a chance at deer in brush. Carrying the gun at ready is tiresome business, and that bolt handle will not stay down.

I believe that deer running in the mountains and timber are just as hard to hit as a rabbit in an open field. Misses don't count in the field and forest; hits count. If misses counted, you would find the score of the average deer hunter to be about ten or twelve per cent, with some, like near beer, one half of one per cent.



Conducted by ————— C.B. Lister

Results of Long Beach Matches

By Cad Counts

THE annual competition of the Western States Small Bore Rifle Association was held at Long Beach, California, on August 15th and 16th on the Los Cerritos range of the Long Beach Rifle Club. Firing commenced at 8 o'clock each day and lasted until dark. In fact grand aggregate scores were not counted and announced until midnight. It was by big odds the most successful match in the history of the Association.

Competition was keen throughout and entries numbered over 100. Every Club in Southern California was represented, including clubs as far north as Santa Barbara and Fresno. Good scores were recorded and interest was sustained until the last shot was fired.

The trophies, in the form of silver and gold cups, were the most elaborate ever offered in similar competition in the state of California. Nineteen cups were offered as first second and third prizes, with an exceptional cup both as to value and design offered for the grand aggregate score. Merchandise prizes were given for fourth, fifth and sixth places.

J. D. McNabb, of Los Angeles, was the winner of the Wimbledon Match with a creditable score of 98. McNabb, a member of the civilian team representing California at Camp Perry in 1924, used a smoke piece borrowed from "Frank Payne of Perry Fame," that appeared to be a relined gas pipe on a 2 x 6 redwood stock. However Mac ironed the kinks out of the barrel and with the assistance of Palma Ammunition was able to consistently hit the black.

The Palma Trophy, after keen competition, was won by Mrs. S. W. Hall of Long Beach, California, with the excellent score of 223. The very best rifle shots in Southern California were entered in this match and conditions were far from ideal. Mrs. Hall used Winchester equipment throughout with Palma ammunition.

The Dewar Match was also won by a woman, Mrs. Leon Dezert of Pasadena, California, with a score of 387 and against the same stiff competition. She shot a borrowed Winchester 52, iron sights and Palma ammunition.

The Championship Match fell to J. C. Burkhardt of Santa Barbara, with a score of 244. He shot a B. S. A. action with special heavy Peterson barrel and special stock with 5-A Winchester scope.

The Woman's Championship was drawn by Mrs. Jack Rains of Long Beach with a possible of 50. This unassuming little lady also shot a possible at 175 yards in the Palma. Her equipment was Winchester 52 with 5-A scope and U. S. .22 N. R. A. ammunition.

The winner of the Grand Aggregate turned out to be H. Wright of Selma, California, with a score of 933. Mr. Wright was a dark horse but proved himself to be a good holder. The pride of Selma carried home enough cups to stock a hardware store. He shot a Winchester 52 with Fecker scope.

Some of the local but nationally known rifle authorities were conspicuous by their absence although invited by verbal and written invitation. Also one or two Secretaries forgot to notify their membership of the program, but the sentiment of the crowd was expressed by one individual with the remark, "I'll have ten men out of my club here next year regardless of the Secretary." A 100 per cent co-operation seems impossible among riflemen. The scores follow:

GRAND AGGREGATE SCORE	
H. Wright, Selma, Cal.	933
CHAMPIONSHIP MATCH	
1. J. C. Burkhardt, Santa Barbara	244
2. H. Wright, Selma	242
3. J. B. Worley, Long Beach	241
4. Dan Broadhead, Pasadena	241
5. Frank Payne, Pasadena	238
6. Leon Dezert, Pasadena	238
PALMA MATCH	
1. Mrs. S. W. Hall, Long Beach	223
2. H. Wright, Selma	221
3. F. C. Payne, Pasadena	220
4. J. B. Worley, Long Beach	219
5. J. C. Burkhardt, Santa Barbara	218
6. J. D. McNabb, Los Angeles	214
WIMBLEDON MATCH	
1. J. D. McNabb, Los Angeles	98
2. S. H. Henderson, Pasadena	96
3. L. A. Pope, Los Angeles	95
4. H. Wright, Selma	95
5. J. B. Worley, Long Beach	94
6. L. Rusth, Pasadena	94
WOMEN'S CHAMPIONSHIP	
1. Mrs. Jack Rains, Long Beach	50
2. Mrs. L. Dezert, Pasadena	49
3. Mrs. A. Q. Johnson, Long Beach	49
4. Miss Mary Darling, Long Beach	46
5. Mrs. S. W. Hall, Long Beach	45
6. Mrs. Pinkey Kegg, Long Beach	35
DEWAR MATCH	
1. Mrs. L. Dezert, Pasadena	387
2. D. H. Nelson, Ontario	385
3. D. Broadhead, Los Angeles	384
4. L. Dezert, Pasadena	380
5. F. C. Payne, Pasadena	380
6. F. C. Worley, Long Beach	378
PISTOL AND REVOLVER MATCH	
1. L. Roberts, Long Beach	148
2. F. C. Payne, Pasadena	144
3. H. F. Van Winkle, Santa Barbara	120
4. C. C. Moore, Walnut Park	115
5. L. A. Pope, Los Angeles	104
6. T. T. McClure, Santa Monica	94

ANNUAL RHODE ISLAND COMPETITION

The Annual State Rifle and Pistol Competitions will be held at the State Range, Rumford, on the following dates:—

Adjutant General's Match, Tuesday, September 8, 1925.

Military Pistol Championship Match, Wednesday, September 9, 1925.

Military Rifle Championship of R. I., Thursday, September 10, 1925.

Championship Team Match, Friday, September 11, 1925.

Captain Archer F. Williams, Ordnance Department, Rhode Island National Guard, will act as Executive Officer and also as Range Officer during all matches and will determine and establish the necessary rules and regulations for said matches.

The conditions governing the various competitions are as follows:—

THE ADJUTANT GENERAL'S MATCH

Open to any officer or enlisted man in the National Guard or organized militia who, this season, qualified as a marksman and nothing better.

Conditions: 2 sighting shots and 10 shots for record at 300 and 500 yards.

Position: prone.

Prize: The Adjutant General offers a suitable trophy for this match.

MILITARY PISTOL CHAMPIONSHIP MATCH

Open to any officer or enlisted man in the National Guard or organized militia, who has during the season, qualified as a sharpshooter or better in the National Guard.

Squadded Match: Positions to be drawn at 1:00 P. M., firing to begin at 1:15.

One score at each stage of Record Course; highest average percentage to win.

Prize: The State of Rhode Island offers a suitable medal for this match.

NATIONAL RIFLE CHAMPIONSHIP OF RHODE ISLAND

Open to all citizens of the State who have, if members of the National Guard or organized militia, qualified during the season as sharpshooters or if civilians have made scores equivalent to that required of sharpshooters.

The conditions are as follows: 2 sighting shots and 10 shots for record at 200, 300, 600, and 1,000 yards.

Positions: 200 yards, standing; 300 yards, kneeling and sitting (5 shots each), 600 and 1,000 yards prone.

Squadded Match: Positions to be drawn at 9:00 A. M. Firing commence at 9:15.

Prizes: The State of Rhode Island offers a championship medal and \$25.00 in cash, provided the entries exceed five in number. In case the entries are five or under, then the medal only is offered.

CHAMPIONSHIP TEAM MATCH

Open to all teams of six men each, either from any organization in the National Guard, organized militia or civilian rifle clubs.

The conditions are: 2 sighting shots and 10 shots for record at 200, 300 and 600 yards.

Positions: 200 yards standing, 300 yards kneeling and sitting (5 shots each), 600 yards prone.

Squadded Match: Positions to be drawn at 9:00 A. M. Firing to commence at 9:15.

Prizes: The State of Rhode Island offers a suitable trophy and \$30.00 in cash.

It will be noted that cash prizes are offered in both the Championship and Team Matches and attention is called to the fact that civilians are eligible to compete in the Championship Match and that Civilian Teams may compete in the Team Match.

A short supplementary season will open on September 21 and close on September 26, during which time those who failed to qualify in the regular season will have an additional opportunity to complete their scores.

Official Bulletins—1925 Small Bore Matches

National Rifle Association of America

PRONE TYRO MATCH NO. 1

Name	Address	Score	Rifle	Sight	Ammunition
E. S. Arthur, Luther, Okla.	200	Win. 52	Win. 5-A	Palma	
Silver Medal-S.O. 19v.	200				
C. Ensel, Luther, Okla.	200	B. S. A.	Fecker	U.S.N.R.A.	
Bronze Medal-S.O. 14v.	200				
C. E. Hicks, Piqua, Ohio	198	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
H. Laug, Piqua, Ohio	197	Win. 52	Fecker	Precision 200	
Bronze Medal					
L. S. Townsend, Ancon, C. Z.	196	Win. 52	Fecker	Palma	
Bronze Medal					
H. Nelson, Ontario, Calif.	195	Win. 52	Fecker	U.S.N.R.A.	
Bronze Medal					
M. E. McManes, Piqua, Ohio	195	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
C. J. Koehler, Saginaw, Mich.	194	Win. 52	Win. 5-A	U.S.N.R.A.	
Bronze Medal					
M. O'Connor, Racine, Wis.	194	Savage	Win. 5-A	Precision 200	
Bronze Medal					
C. J. Perry, Saginaw, Mich.	194	Win. 52	Win. 5-A	U.S.N.R.A.	
Bronze Medal					
E. W. Pape, New Britain, Conn.	193	Win. 52	Win. 5-A	Precision 200	
W. H. Thomas, Santa Barbara, Cal.	191	Win. 52	Win. 5-A	U.S.N.R.A.	
C. J. Chamberlain, Chicago, Ill.	189	Stevens 414	No record	Precision 200	
O. E. Kramer, Santa Barbara, Cal.	184	Savage	Win. 5-A	U.S.N.R.A.	
L. E. Bigelow, Jacksonville, Fla.	182	Sav. Sport.	Metallic	Peters T.H.	
W. R. O'Neill, Steubenville, O.	180	Win. 52	Metallic	U.S.N.R.A.	
L. M. Reihsen, Ontario, Calif.	180	Win. 52	Fecker	U.S.N.R.A.	
W. H. Haven, Jacksonville, Fla.	175	Savage	Metallic	U.S.N.R.A.	
L. S. Sangers, Ontario, Calif.	152	Win. 52	Fecker	U.S.N.R.A.	

Not Reported

W. M. Perry, Columbia, S. C.	L. Gillespie, Sidney, Ohio.
Esta Fouts, Sidney, Ohio.	W. Rostrom, Sidney, Ohio.
G. Ehrhardt, Sidney, Ohio.	C. Partington, Sidney, Ohio.
F. P. Holt, Pocatello, Idaho.	Alma Marley, Pocatello, Idaho.
H. E. Bass, Tulsa, Oklahoma.	M. Ferguson, Los Angeles, Calif.
	H. Garrett, Ontario, Calif.

MATCH NO. 2, SMALL BORE FREE RIFLE CHAMPIONSHIP

Name	Address	Score	Rifle	Sight	Ammunition
L. O. Moore, New Cumberland, Ohio	570	Win. 52	Metallic	Palma	
Gold Medal					
T. T. Westergard, Whiting, Iowa	503	Pet.-Ballard	Lyman-103	Palma	
Bronze Medal					
E. Johnson, Cleveland, Ohio	485	Hoff-Martini	B. S. A.	Palma	
Bronze Medal					
H. E. Brill, Tulsa, Oklahoma	481	Win. 52	Lyman-48	Palma	
Bronze Medal					
A. K. Kriedrich, Ames, Iowa	467	Niedner	Tang-Rear	Palma	
Bronze Medal					
C. H. Johnson, Upper Darby, Penna.	451	No record	No record	No record	
Bronze Medal					
E. M. Kidder, Ayer, Mass.	450	Springf. .22	Lyman-48	U.S.N.R.A.	
Bronze Medal					
F. C. Payne, Los Angeles, Calif.	443	Dillard-Ball	Metallic	Western	
Bronze Medal					
C. A. Moore, Somerville, Mass.	442	Win. 52	Metallic	Precision 200	
Bronze Medal					
W. W. John, Cristobal, C. Z.	360	B. S. A.	B. S. A.	No Palma	

Not Reported

A. E. Hart, Cleveland, Ohio.	E. W. Pape, New Britain, Conn.
R. R. Haines, East Akron, Ohio.	G. G. Colby, Medford, Mass.
R. T. Strickland, Dayton, Ohio.	P. R. Mason, Ayer, Massachusetts.
J. E. Faust, Dayton, Ohio.	J. R. Mooney, Chicago, Illinois.
M. W. Dinwiddie, Charlottesville, Va.	P. T. McNeal, Ames, Iowa.
	A. E. Howells, Milford, Utah.

MATCH NO. 3, SITTING TYRO MATCH

Name	Address	Score	Rifle	Sight	Ammunition
P. T. McNeal, Ames, Iowa	190	Win. 52	Win. 5-A	Palma	
Silver Medal					
M. O'Connor, Racine, Wisconsin	186	Savage	Win. 5-A	Precision 200	
Bronze Medal					
B. B. Bulawa, Chicago, Illinois	186	Win. M'k't.	Metallic	U.S.N.R.A.	
Bronze Medal					
O. E. Kramer, Santa Barbara, Calif.	175	Savage	Win. 5-A	U.S.N.R.A.	
Bronze Medal					
C. J. Koehler, Saginaw, Michigan	175	Win. 52	Win. 5-A	Western	
Bronze Medal					
W. R. O'Neill, Steubenville, Ohio	168	Win. 52	Metallic	U.S.N.R.A.	

Not Reported

S. M. Martin, Ashland, Ohio.	Alma Marley, Pocatello, Idaho.
H. E. Bass, Tulsa, Oklahoma.	M. Ferguson, Los Angeles, Calif.

MATCH NO. 4, STANDING TYRO MATCH

Name	Address	Score	Rifle	Sight	Ammunition
H. Sargent, Baltic, Connecticut	176	Ballard	Stevens	Precision 200	
Silver Medal					
C. J. Perry, Saginaw, Michigan	167	Win. 52	Win. 5-A	U.S.N.R.A.	
Bronze Medal					
P. T. McNeal, Ames, Iowa	154	Win. 52	Win. 5-A	Palma	
Bronze Medal					
C. R. Hays, Chambersburg, Penna.	148	Stevens 414	Metallic	U.S.N.R.A.	

Not Completed

L. H. Rhehson, Ontario, Calif.

Not Reported

H. A. Becrup, Pocatello, Idaho.	H. E. Bass, Tulsa, Oklahoma.
M. Ferguson, Los Angeles, Calif.	W. M. Perry, Columbia, So. Carolina.

50 YARD INDIVIDUAL MATCH NO. 5

Name	Address	Score	Rifle	Sight	Ammunition
M. L. Bonta, Wilmington, Ohio	400	Win. 52	Win. 5-A	Precision 200	
Silver Medal					
T. K. Lee, Birmingham, Ala.	399	Win. 52	Fecker	Peters	
Bronze Medal					
J. D. Foland, Wilmington, Ohio	399	Win. 52	Win. 5-A	Winchester	
Bronze Medal					
X. O. More, New Cumberland, Ohio	399	Win. 52	Metallic	Palma	
Bronze Medal					
Lt. W. T. Ross, Santa Barbara, Cal.	398	Pet.-Win.	Win. 5-A	Palma	
Bronze Medal					
M. E. McManes, Piqua, Ohio	398	Win. 52	Fecker	Peters	
Bronze Medal					
A. K. Friedrich, Ames, Iowa	397	Win. 52	Stevens-4	Precision 200	
Bronze Medal					
J. C. Burkhart, Santa Barbara, Cal.	396	Win. 52	Win. 5-A	Palma	
Bronze Medal					
C. E. Hicks, Piqua, Ohio	396	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
R. M. Kelley, Pasadena, Calif.	395	Win. 52	Win. 5-A	Palma	
Bronze Medal					
A. E. Hart, Cleveland, Ohio	395	Hoff-Martini	Fecker	Palma	
C. J. Koehler, Saginaw, Mich.	395	Win. 52	Win. 5-A	U.S.N.R.A.	
W. J. G. Land, Chicago, Ill.	395	Stevens 414	Win. 5-A	Precision 200	
H. Morrell, New Haven, Conn.	395	Win. 52	Win. 5-A	Precision 200	
F. C. Kimmel, St. Louis, Mo.	395	Win. 52	Fecker	U.S.N.R.A.	
H. F. McDonald, Portland, Ore.	394	Win. 52	Fecker	Precision 200	
C. H. Johnson, Upper Darby, Pa.	394	No record	No record	No record	
L. E. Klein, Massillon, Ohio	393	Win. 52	Win. 5-A	Palma	
C. J. Perry, Saginaw, Mich.	392	Win. 52	Win. 5-A	U.S.N.R.A.	
R. R. Haines, East Akron, Ohio	392	No record	No record	No record	
H. J. Gussman, New Haven, Conn.	391	Win. 52	Win. 5-A	Precision 75	
V. J. Huff, Racine, Wis.	391	Win. 52	Win. 5-A	Precision 200	
V. J. Hadin, Schenectady, N. Y.	391	Win. 52	Win. 5-A	Precision 200	
G. Satavia, Saginaw, Mich.	391	Win. 52	Win. 5-A	U.S.N.R.A.	
R. R. Bastian, New Orleans, La.	390	Win. 52	Win. 5-A	Palma	
G. H. Sittler, Germansville, Pa.	390	Win. 52	Fecker	U.S.N.R.A.	
F. Johnson, Joliet, Ill.	389	Springf. .22	Win. 5-A	U.S.N.R.A.	
C. C. Held, Allentown, Pa.	389	Win. 52	Fecker	Palma	
E. Johnson, Cleveland, Ohio	389	Hoff-Martini	Fecker	Palma	
C. M. Fell, Massillon, Ohio	389	Win. 52	Win. 5-A	Palma	
D. H. Nelson, Ontario, Calif.	389	Win. 52	Fecker	U.S.N.R.A.	
F. T. Oswald, New Tripoli, Pa.	389	Win. 52	Fecker	Palma	
W. S. Gibbons, Melrose, Mass.	388	Springf. .22	No record	Precision 200	
O. O'Connor, Racine, Wis.	388	Savage	Win. 5-A	Precision 200	
J. H. Laug, Piqua, Ohio	388	Win. 52	Win. 5-A	Precision 200	
M. V. Roberts, Chicago, Ill.	388	Win. 52	Win. 5-A	U.S.N.R.A.	
D. S. Seymour, Chicago, Ill.	388	B. S. A.	Fecker	U.S.N.R.A.	
J. F. Woolshlager, Castorland, N.Y.	388	Savage	Malcolm	Precision 200	
J. R. Satava, Cleveland, Ohio	387	Win. 52	Beld-Mull	Palma	
C. A. Moore, Somerville, Mass.	387	Win. 52	Malcolm	Precision 200	
A. G. Percy, Schenectady, N. Y.	387	Springf. .22	Fecker	U.S.N.R.A.	
R. G. Veldenheim, Chicago, Ill.	387	Springf. .22	Win. 5-A	Palma	
E. H. Coleman, New Orleans, La.	386	Win. 52	Metallic	Palma	
H. E. Brill, Tulsa, Okla.	386	Win. 52	Win. 5-A	Palma	
C. J. Chamberlain, Chicago, Ill.	385	Stevens 414	No record	Precision 200	
L. S. Townsend, Ancon, Canal Zone	385	Win. 52	Fecker	Palma	
C. S. Bostwick, Boston, Mass.	385	Win. 52	No record	Precision 200	
H. Hubele, St. Louis, Mo.	385	Win. 52	Fecker	U.S.N.R.A.	
W. H. Sietzer, Cleveland, Ohio	384	Win. 52	Win. 5-A	Precision 200	
E. W. Pape, New Britain, Conn.	384	Win. 52	Win. 5-A	Precision 200	
C. H. German, New Tripoli, Pa.	383	Win. 52	Fecker	Palma	
F. E. Glasgow, Chicago, Ill.	381	Win. 52	Win. 5-A	U.S.N.R.A.	
F. H. Bulander, Schenectady, N. Y.	381	Win. 52	Win. 5-A	Precision 200	
E. M. Kidder, Ayer, Mass.	379	Springf. .22	Fecker	U.S.N.R.A.	
L. R. Shifflet, Birmingham, Ala.	379	Win. 52	Win. 5-A	No record	
E. S. Watson, Hartford, Conn.	377	Win. 52	Metallic	Winchester	
L. Berggren, Alexandria, Minn.	370	Win. 52	Metallic	Palma	
O. E. Kramer, Santa Barbara, Calif	367	Savage	Win. 5-A	U.S.N.R.A.	
L. D. Evans, Pocatello, Idaho	367	Win. 52	Metallic	U.S.N.R.A.	
F. Sorce, Chicago, Ill.	361	Springf. .22	Win. 5-A	U.S.N.R.A.	
L. E. Bigelow, Jacksonville, Fla.	359	Sav. Sport.	Metallic	Peters T.H.	
W. R. O'Neal, Steubenville, Ohio	349	Winchester	Metallic	U.S.N.R.A.	

Did Not Shoot. Targets Returned

C. C. Berkeley, Newport News, Va. P. G. Peter, Germansville, Penna.

Not Reported

H. H. Chedester, Bentleyville, Penna.	R. W. Larke, Highland Park, Ill.
A. J. Yearsley, Piqua, Ohio.	A. Marley, Pocatello, Idaho.
C. Partington, Sidney, Ohio.	G. Bentel, Pocatello, Idaho.
E. Feuts, Sidney, Ohio.	H. E. Bass, Tulsa, Oklahoma.
L. Gillespie, Sidney, Ohio.	D. V. Brodhead, Los Angeles, Calif.
G. Ehrhardt, Sidney, Ohio.	M. Ferguson, Los Angeles, California.
F. B. Roziene, Chicago, Illinois.	J. Driver, Sacramento, California.

MATCH NO. 13, (BOBBING TARGET MATCH) 200 YARDS

Name	Address	Score	Rifle	Sight	Ammunition
R. H. Kelley, Pasadena, Calif.	94	Springfield	Lyman-48	Western	
Silver Medal					
R. Devereux, New York City, N. Y.	90	Springf. '03	Service	U.S. 150 gr. 18	
Bronze Medal					
J. A. Satavia, Cleveland, Ohio	87	Springf. '03	Service	Hand Loaded	
Bronze Medal					
L. A. Anderson, Chicago, Ill.	78	Springf. '03	Lyman-48	Rem. 18	
Bronze Medal					

Withdrew by Permission of N. E. A.

J. F. Weigand, Wausau, Wisconsin.

Not Reported

A. E. Hart, Cleveland, Ohio.	E. Johnson, Cleveland, Ohio.
B. B. Bulawa, Chicago, Illinois.	W. E. Crain, San Rafael, Calif.

MATCH NO. 6. INDIVIDUAL SMALL BORE CHAMPIONSHIP

Name	Address	Score	Rifle	Sight	Ammunition
T. K. Lee, Birmingham, Ala.	795	Win. 52	Fecker	Peters T.H.	
Gold Medal					
A. E. Hart, Cleveland, Ohio	791	Hoff-Martini	Fecker	Palma	
Bronze Medal					
X. D. Foland, Wilmington, Ohio	790	Win. 52	Win. 5-A	Winchester	
Bronze Medal					
R. M. Kelley, Pasadena, Calif.	788	Win. 52	Win. 5-A	Palma	
Bronze Medal					
C. E. Hicks, Piqua, Ohio	788	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
M. E. McManes, Piqua, Ohio	787	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
L. O. Moore, New Cumberland, Ohio	787	Win. 52	Metallic	Palma	
Bronze Medal—Silver Medal awarded for high score with metallic sights.					
A. K. Friedrich, Ames, Iowa	785	Win. 52	Stevens-4	Precision 200	
Bronze Medal					
C. H. Johnson, Upper Darby, Pa.	784	No record	No record	No record	
Bronze Medal					
H. F. McDonald, Portland, Ore.	784	Win. 52	Fecker	Precision 200	
Bronze Medal					
W. J. G. Land, Chicago, Ill.	783	Stevens 414	Win. 5-A	Precision 200	
L. E. Klein, Massillon, Ohio	782	Win. 52	Win. 5-A	Palma	
F. C. Kimmel, St. Louis, Mo.	781	Win. 52	Fecker	U.S.N.R.A.	
E. Johnson, Cleveland, Ohio	779	Hoff-Martini	Fecker	Palma	
C. A. Moore, Somerville, Mass.	775	Win. 52	Malcolm	Precision 200	
C. M. Fell, Massillon, Ohio	775	Win. 52	Win. 5-A	Palma	
H. J. Gussman, New Haven, Conn.	775	Win. 52	Win. 5-A	Precision 200	
R. Bastian, New Orleans, La.	772	Win. 52	Win. 5-A	Palma	
V. J. Huff, Racine, Wis.	772	Win. 52	Win. 5-A	Palma	
H. E. Brill, Tulsa, Okla.	771	Win. 52	Win. 5-A	Palma	
C. J. Perry, Saginaw, Mich.	771	Win. 52	Win. 5-A	U.S.N.R.A.	
J. Chamberlain, Chicago, Ill.	768	Stevens 414	No record	Precision 200	
W. H. Slotzer, Cleveland, Ohio	767	Win. 52	Win. 5-A	Precision 200	
E. W. Pape, New Britain, Conn.	763	Win. 52	Win. 5-A	Precision 200	
L. R. Shiffert, Birmingham, Ala.	761	Win. 52	Win. 5-A	Palma	
E. H. Coleman, New Orleans, La.	759	Win. 52	Metallic	Palma	
D. H. Nelson, Ontario, Calif.	757	Win. 52	Fecker	U.S.N.R.A.	
G. Satava, Saginaw, Mich.	754	Win. 52	Win. 5-A	U.S.N.R.A.	
L. Berggren, Alexandria, Minn.	747	Win. 52	Metallic	Palma	
X. Hubele, St. Louis, Mo.	734	Win. 52	Fecker	U.S.N.R.A.	
E. C. Evans, Pocatello, Idaho	728	Win. 52	Metallic	U.S.N.R.A.	

Not Completed

F. H. Bulander, Schenectady, N. Y.	G. H. Sittler, Germansville, Penna.
C. C. Held, Allentown, Penna.	F. T. Oswald, New Tripoli, Penna.
O. H. German, New Tripoli, Penna.	W. R. O'Neill, Steubenville, Ohio.
	R. W. Larke, Highland Park, Ill.

Not Reported

P. G. Peter, Germansville, Penna.	Alma Marley, Pocatello, Idaho.
	G. Bentel, Pocatello, Idaho.

MATCH NO. 14. 600 YARDS MATCH

Name	Address	Score	Rifle	Sight	Ammunition
A. E. Smith, Sacramento, Calif.	99	Springf. '03	Service	F.A. '24	
Gold Medal					
C. E. Mitchell, Walden, Colo.	98	Springf. '03	Service	R.I.A.	
Bronze Medal					
R. V. Wilzowski, Des Moines, Iowa	97	Springf. '03	Service	F.A. '23	
Bronze Medal					
W. C. Wilson, Minneapolis, Minn.	97	Krag Mod. '98	Service	Hand Loaded	
Bronze Medal—Special Silver Medal					
J. O. Norcross, Worcester, Mass.	97	Springf. '03	Service	F.A. '24	
Bronze Medal					
J. A. Hamilton, Albany, N. Y.	96	Springf. '03	Service	F.A. '23	
Bronze Medal					
A. B. Sprague, Worcester, Mass.	96	Springf. '03	Service	F.A. '23	
Bronze Medal					
F. Johansen, Joliet, Ill.	96	Springf. '03	Lyman 48	Hand Loaded	
Bronze Medal					
W. H. Rhodes, Berkeley, Calif.	94	Springf. '03	Service	Hand Loaded	
Bronze Medal					
L. L. Graham, Stockton, Calif.	94	Springf. '03	Service	F.A. '24	
Bronze Medal					
J. F. Weigand, Wausau, Wis.	94	Springf. '03	Lyman-48	Rem-Palma 24	
C. G. Barthoud, Stockton, Calif.	93	Springf. '03	Service	F.A. '24	
B. Higbee, Walden, Colo.	93	Springf. '03	Service	No record	
F. Laine, Santa Clara, Calif.	92	Springf. '03	Service	F.A. '24	
E. N. Moor, Jr.	91	Springf. '03	Service	F.A. '24	
S. Boswell, Detroit, Mich.	91	Springf. '03	Service	No record	
F. H. Bulander, Schenectady, N. Y.	91	Springf. '03	Service	Western	
T. H. Sackett, Livermore, Colo.	90	No record	No record	No record	
A. L. Keefe, Meadville, Pa.	90	Springf. '03	Service	Win. '18	
W. H. Haven, Jacksonville, Fla.	90	Springf. '03	Service	Win. '18	
V. L. Hadin, Schenectady, N. Y.	89	Springf. '03	Service	Western	
E. L. A. Bruger, Ladysmith, Wis.	87	Springf. '03	Service	Rem. '18	
W. McNamee, Jacksonville, Fla.	86	Springf. '03	Service	F.A. '24	
L. A. Anderson, Chicago, Ill.	86	Krag Mod. '98	Service	Hand Loaded	
C. Werner, Detroit, Mich.	84	Springf. '03	Service	No record	
J. Kencall, Detroit, Mich.	86	Springf. '03	Service	No record	
O. B. Ellingbee, Ladysmith, Wis.	79	Springf. '03	Service	Rem. '18	
L. E. Elgelow, Jacksonville, Fla.	76	Springf. '03	Service	F.A. '24	

Reported Sick

R. W. Larke, Highland Park, Illinois.

Unable to Shoot

C. W. Randall, Alameda, Calif.	Roger M. Kellek, Pasadena, Calif.
	F. C. Kimmel, St. Louis, Missouri.

Not Reported

A. E. Hart, Cleveland, Ohio.	Eric Johnson, Cleveland, Ohio.
Ray Crump, Evanston, Ill.	H. V. Roberts, Chicago, Ill.
H. Hubele, Chicago, Ill.	F. Putnam, Detroit, Mich.
P. M. Scoville, Walden, Colo.	R. Riddle, Walden, Colo.
B. B. Slater, Walden, Colo.	C. J. Bollin, Livermore, Colo.
W. E. Crain, San Rafael, Calif.	H. E. Ford, San Jose, Calif.

CREEDMOOR COUNT

MATCH NO. 8. 100 YARD INDIVIDUAL MATCH

Name	Address	Score	Rifle	Sight	Ammunition
M. C. Engel, Luther, Okla.	399-12v	R. S. A.	Fecker	U.S.N.R.A.	
Silver Medal					
T. K. Lee, Birmingham, Ala.	396-17v	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
A. E. Hart, Cleveland, Ohio	396-14v	Hoff-Martini	Fecker	Palma	
Bronze Medal					
J. A. Hamilton, Albany, N. Y.	396-1-8	Springf. '22	Metallic	U.S.N.R.A.	
Bronze Medal					
M. E. Bonta, Wilmington, Ohio	395-19-v	Win. 52	Win. 5-A	Precision 200	
Bronze Medal					
R. M. Kelley, Pasadena, Calif.	392-1-8	Win. 52	Win. 5-A	Palma	
Bronze Medal					
C. E. Hicks, Piqua, Ohio	392-17v	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
J. N. Shumway, Painted Post, N.Y.	391-13v	Stev-Maynard	No record	U.S.N.R.A.	
Bronze Medal					
C. A. Moore, Somerville, Mass.	391-12v	Win. 52	Win. 5-A	Winchester	
Bronze Medal					
E. Johnson, Cleveland, Ohio	390-16v	Hoff-Martini	Fecker	Precision 200	
Bronze Medal					
C. H. Johnson, Upper Darby, Pa.	390-13v	No record	No record	No record	
H. F. McDonald, Portland, Oregon	390-11v	Win. 52	Fecker	Precision 200	
M. E. McManes, Piqua, Ohio	389	Win. 52	Fecker	Peters T.H.	
L. E. Klein, Massillon, Ohio	389	Win. 52	Win. 5-A	Palma	
W. J. G. Land, Chicago, Ill.	388	Stevens 414	No record	Precision 200	
C. A. Moore, Somerville, Mass.	388	Win. 52	Malcolm	Precision 200	
F. Johnson, Joliet, Ill.	388	Springf. '22	Win. 5-A	U.S.N.R.A.	
F. Fowler, Minneapolis, Minn.	388	Win. 52	Malcolm-1	Palma	
A. K. Friedrich, Ames, Iowa	388	Win. 52	Stevens-4	Precision 200	
L. O. Moore, New Cumberland, O.	388	Win. 52	Metallic	Palma	
F. C. Payne, Los Angeles, Cal.	387	Dillard-Ball.	Fecker	Palma	
M. O'Connor, Racine, Wis.	387	Savage	Win. 5-A	Precision 200	
C. M. Fell, Massillon, Ohio	386	Win. 52	Win. 5-A	Palma	
F. C. Kimmel, St. Louis, Mo.	386	Win. 52	Fecker	U.S.N.R.A.	
H. E. Brill, Tulsa, Okla.	385	Win. 52	Win. 5-A	Palma	
H. J. Gussman, New Haven, Conn.	384	Win. 52	Win. 5-A	Precision 200	
C. J. Chamberlain, Chicago, Ill.	383	Stevens 414	Stevens	Precision 200	
C. S. Bestwick, Boston, Mass.	383	Win. 52	Fecker	Precision 200	
L. A. Pope, Los Angeles, Cal.	383	Springf. '22	Fecker	Precision 200	
H. H. Chedestor, Bentleyville, Pa.	383	Win. 52	Win. 5-A	U.S.N.R.A.	
A. B. Sprague, Worcester, Mass.	383	Win. 52	Stevens-6	Precision 200	
W. H. Sietzer, Cleveland, Ohio	383	Win. 52	Win. 5-A	Precision 200	
R. R. Holmes, East Akron, Ohio	382	Win. 52	Win. 5-A	Palma	
L. R. Shiffert, Birmingham, Ala.	382	Win. 52	Win. 5-A	Palma	
R. E. Bastian, New Orleans, La.	382	Win. 52	Win. 5-A	Palma	
F. E. Smith, Winter Haven, Fla.	382	Springf. '22	Fecker	U.S.N.R.A.	
V. J. Hadin, Schenectady, N. Y.	381	Win. 52	Win. 5-A	U.S.N.R.A.	
V. J. Huff, Racine, Wis.	381	Win. 52	Win. 5-A	Precision 200	
H. Morrill, New Haven, Conn.	380	Win. 52	Win. 5-A	Precision 200	
E. H. Kidder, Ayer, Mass.	380	Springf. '22	Fecker	U.S.N.R.A.	
B. T. Strickland, Dayton, Ohio	380	Win. 52	Fecker	Palma	
R. E. Horney, Evansville, Ind.	380	Win. 52	Win. 5-A	U.S.N.R.A.	
J. J. Perry, Saginaw, Mich.	379	Win. 52	No record	U.S.N.R.A.	
W. S. Gibbons, Melrose, Mass.	379	Springf. '22	Fecker	Precision 200	
J. E. Faust, Dayton, Ohio	379	Win. 52	Fecker	U.S.N.R.A.	
J. O. Norcross, Worcester, Mass.	379	Win. 52	Fecker	Palma	
E. W. Pape, New Britain, Conn.	379	Springf. '22	Fecker	U.S.N.R.A.	
A. G. Percy, Schenectady, N. Y.	379	Springf. '22	Fecker	U.S.N.R.A.	
B. B. Richardson, Ellwood City, Pa.	379	Win. 52	Win. 5-A	U.S.N.R.A.	
F. H. Sackett, Livermore, Colo.	378	Springf. '22	Win. 5-A	Precision 200	
C. C. Berkeley, Newport, Va.	378	Stevens 414	Stevens	U.S.N.R.A.	
F. W. Osgood, Pleasantville, N.Y.	378	Springf. '22	Fecker	Palma	
D. S. Seymour, Chicago, Ill.	377	B. S. A.	Fecker	U.S.N.R.A.	
L. Berggren, Alexandria, Minn.	377	Win. 52	Metallic	Palma	
C. T. Giberson, Winter Haven, Fla.	375	Springf. '22	Fecker	U.S.N.R.A.	
J. F. Woolshlager, Castorland, N. Y.	375	Stevens 414	Win. 5-A	Palma	
J. L. Moser, Louisville, Ky.	374	Win. 52	Win. 5-A	U.S.N.R.A.	
E. H. Coleman, New Orleans, La.	373	Win. 52	Fecker	Palma	
Fred Sorse, Chicago, Ill.	371	Springf. '22	Win. 5-A	U.S.N.R.A.	
D. L. Keith, Lansing, Mich.	370	Springf. '22	Win. 5-A	U.S.N.R.A.	
C. E. Bigelow, Jacksonville, Fla.	370	Stevens 414	Stevens	Palma	
G. F. Glasgow, Chicago, Ill.	369	Win. 53	Win. 5-A	U.S.N.R.A.	
D. H. Nelson, Ontario, Calif.	368	Win. 52	Fecker	U.S.N.R.A.	
J. C. Evans, Pocatello, Idaho	361	Win. 52	Metallic	U.S.N.R.A.	
M. Satava, Saginaw, Mich.	363	Win. 52	No record	U.S.N.R.A.	
C. J. Koehler, Saginaw, Mich.	358	Win. 52	Win. 5-A	U.S.N.R.A.	
H. Hubele, St. Louis, Mo.	349	Win. 52	Fecker	U.S.N.R.A.	
J. M. Kirkwood, Pittsburgh, Pa.	347	Savage	Metallic	Precision 200	
W. H. Haven, Jacksonville, Fla.	324	Savage	Metallic	U.S.N.R.A.	

MATCH NO. 12. 200 YARD OFF-HAND MATCH

Name	Address	Score	Rifle	Sight	Ammunition
E. N. Moor, Jr., Berkeley, Calif.	95	Springf. '03	Service	Hand Loaded	
Gold Medal					
W. H. Rhodes, Berkeley, Calif.	94	Springf. '03	Service	Hand Loaded	
Bronze Medal					
J. R. Satava, Cleveland, Ohio	94	Springf. '03	Service	Hand Loaded	
Bronze Medal					
B. M. Kelley, Pasadena, Calif.	94	Spring-Sport	Lyman-48	F.A. '21	
Bronze Medal					
R. Devereux, New York City	93	Springf. '03	Service	U.S. 150 gr. '11	
F. Laine, Santa Clara, Calif.	92	Springf. '03	Service	F.A. '24	
Bronze Medal					
C. W. Randall, Alameda, Calif.	90	Springf. '03	Service	Hand Loaded	
Bronze Medal					
F. Johansen, Joliet, Ill.	90	Springf. '03	Lyman-48	Hand Loaded	
Bronze Medal					
L. L. Graham, Stockton, Calif.	87	Springf. '03	Service	Hand Loaded	
Bronze Medal					
J. F. Weigand, Wausau, Wis.	87	Springf. '03	Lyman-48	Hand Loaded	
Bronze Medal					
L. H. Anderson, Chicago, Ill.	86	Springf. '03	Lyman-48	Hand Loaded	
J. O. Norcross, Worcester, Mass.	86	Springf. '03	Service	F.A. '17	
E. L. A. Bruger, Ladysmith, Wis.	84	Springf. '03	Lyman-48	Rem. '18	
A. B. Sprague, Worcester, Mass.	84	Springf. '03	Service	F.A. '17	
W. Jones, Sunnyvale, Calif.	83	Springf. '03	Service	F.A. '24	

Not Reported

A. E. Hart, Cleveland, Ohio.	Eric Johnson, Cleveland, Ohio.
W. S. Carroll, Ridgewood, N. J.	M. C. Grubb, Athens, Ohio.
R. W. Highland Park, Ill.	F. C. Payne, Los Angeles, Calif.

CREEDMOOR COUNT

INTERCLUB CHAMPIONSHIP, MATCH NO. 9.

Winner: Frankford Arsenal Rifle Club, Philadelphia, Penna. Silver Medals.

Name	Rifle	Sight	Ammunition	Score
L. J. Miller	Winchester 52	Fecker	U.S.N.R.A.	397
R. H. Betts	Winchester 52	Fecker	U.S.N.R.A.	394
N. G. Stabler	Springfld. 22	Win. 5-A	U.S.N.R.A.	393
C. H. Johnson	Pope-Ballard	Fecker	U.S.N.R.A.	396
C. S. Hogue	Winchester 52	Win. 5-A	Palma	394

Aggregate 1974

2nd Place: Peerless Rifle Club, Cleveland, Ohio. Bronze Medals.

Name	Rifle	Sight	Ammunition	Score
D. Baker	Baker Hi-Speed	Fecker	Palma	399
A. E. Hart	Hoffman	Fecker	Palma	396
E. Johnson	Hoffman	Fecker	Palma	392
W. C. Anderson	Hoffman	Fecker	Palma	386

Aggregate 1968

3rd Place: Portland Rifle Club, Portland, Oregon. Bronze Medals.

Name	Rifle	Sight	Ammunition	Score
H. F. McDonald	Winchester 52	Fecker	Precision 200	398
H. J. Cripe	Winchester 52	Fecker	Precision 200	395
E. E. Brown	Winchester 52	Fecker	Precision 200	394
J. E. Helm	Winchester 52	Win. 5-A	Precision 200	388
F. P. Studholme	Winchester 52	Win. 5-A	Precision 200	387

Aggregate 1962

Rank	Club	Address	Score
4.	McCook Field Rifle Club	Dayton, Ohio.	1952
5.	Hillsboro Rifle Club	Hillsboro, Ohio.	1951
6.	Quinnipiac Rifle Club	New Haven, Conn.	1946
7.	Perth Amboy Rifle Club	Perth Amboy, N. J.	1945
8.	Pasadena R. & R. Club Team No. 1	Pasadena, Calif.	1940
9.	Pasadena R. & R. Club Team No. 2	Pasadena, Calif.	1932
10.	Bear Rock Rifle Club Team No. 1	Germansville, Penna.	1929
11.	Chicago Rifle Club	Chicago, Illinois.	1921
12.	Wilkes-Barre Rifle Club	Wilkes-Barre, Penna.	1919
13.	Ames Faculty Rifle Club	Ames, Iowa.	1918
14.	Mound City Rifle Club	Webster Groves, Mo.	1914
15.	Whiting Rifle Club	Whiting, Iowa.	1908
16.	Schenectady Rifle Club	Schenectady, N. Y.	1902
17.	Louisville Natl. Rifle Club	Louisville, Ky.	1900
18.	Maas. Rifle Asso. Rifle Club	Melrose, Mass.	1900
19.	Cleveland Okla. Rifle Club Team No. 1	Cleveland, Oklahoma.	1898
20.	Spang-Chalfant Rifle Club Team No. 1	Pittsburgh, Penna.	1895
21.	Franklin Rifle Club	Franklin, Penna.	1895
22.	Claremont Rifle Club Team No. 1	Claremont, N. H.	1893
23.	Livermore Rifle Club	Livermore, Colorado.	1890
24.	Evansville Rifle Club	Evansville, Indiana.	1885
25.	Cleveland Okla. Rifle Club Team No. 2	Cleveland, Oklahoma.	1885
26.	Bear Rock Rifle Club Team No. 2	Germansville, Penna.	1880
27.	Holtwood Rifle Club	Holtwood, Penna.	1877
28.	New Britain Rifle Club Team No. 1	New Britain, Conn.	1874
29.	Spang-Chalfant Rifle Club Team No. 2	Pittsburgh, Penna.	1866
30.	Louisville Natl. Rifle Club Team No. 2	Louisville, Ky.	1862
31.	Claremont Rifle Club Team No. 2	Claremont, N. H.	1844
32.	Jacksonville Rifle Club	Jacksonville, Florida.	1836
33.	Spang-Chalfant Rifle Club Team No. 3	Pittsburgh, Penna.	1806
34.	Spang-Chalfant Rifle Club Team No. 4	Pittsburgh, Penna.	1804
35.	Associated Rifle Club	Coalinga, Calif.	1566
36.	New Britain Rifle Club Team No. 2	New Britain, Conn.	1565

MATCH NO. 11, FREE RIFLE MATCH (300 YARDS)

Name	Address	Score	Rifle	Sight	Ammunition
F. G. Dana, Hunlock Creek, Pa.	534 Spring-Win.	Lyman-48 Rem.-Palma			
Gold Medal					
E. N. Moor, Jr., Berkeley, Calif.	519 Spring-Inter.	Lyman-48 F. A. 24			
Bronze Medal					
C. W. Randall, Alameda, Calif.	465 Spring-Nied.	Lyman-48 Hand Loaded			
Bronze Medal					
A. K. Friedrich, Ames, Iowa.	463 Spring-Nied.	Lyman-48 Hand Loaded			
Bronze Medal					
F. Johansen, Joliet, Ill.	458 Spring-Nied.	Lyman-48 Hand Loaded			
Bronze Medal					
R. M. Kelley, Pasadena, Calif.	441 Spring-Sport.	Lyman-48 Hand Loaded			
Bronze Medal					
W. H. Rhodes, Berkeley, Calif.	435 Springf. '03	Service Hand Loaded			
Bronze Medal					
H. A. Phillips, Salt Lake City, Utah.	433 Springfield	Lyman-48 F. A. 24			
Bronze Medal					
F. E. Jensen, Salt Lake City, Utah.	399 Springf. '03	Service Rem. Arms 18			
Bronze Medal					

MATCH NO. 10, 200 YARD INDIVIDUAL CHAMPIONSHIP

Name	Address	Score	Rifle	Sight	Ammunition
M. L. Bonta, Wilmington, Ohio.	100-20v	Win. 52	Win. 5-A	Win. 200	
Shoot-Off	100-19v	Win. 52	Win. 5-A	Peters T.H.	
Silver Medal, State Championship of Ohio, 1925, Special Bronze Medal					
J. D. Poland, Wilmington, Ohio.	100-20v	Win. 52	Win. 5-A	Win. 200	
Shoot-Off	100-17v	Win. 52	Win. 5-A	Win. 200	
Bronze Medal					
L. O. Moore, New Cumberland, O.	100-18v	Win. 52	Metallic	Palma	
Shoot-Off	100-20v	Win. 52	Metallic	Palma	
Bronze Medal, Special Silver Medal, High Iron Sights					
E. S. Arthur, Luter, Oklahoma.	100-18v	Win. 52	Win. 5-A	Palma	
Shoot-Off No. 1	100-19v	Win. 52	Win. 5-A	Precision 75	
Shoot-Off No. 2	100-20v	Win. 52	Win. 5-A	Precision 75	
Bronze Medal					
J. A. Hamilton, Albany, N. Y.	100-18v	Springf. .22	Metallic	U.S.N.R.A.	
Shoot-Off No. 1	100-19v	Springf. .22	Metallic	U.S.N.R.A.	
Shoot-Off No. 2	Not returned				
C. E. Hicks, Piqua, Ohio.	100-16v	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
F. C. Kimmel, St. Louis, Mo.	100-11v	Win. 52	Fecker	U.S.N.R.A.	
Bronze Medal					
M. E. McManes, Piqua, Ohio	100-7v	Win. 52	Fecker	Peters T.H.	
Bronze Medal					
C. M. Fell, Massillon, Ohio.	99-13v	Win. 52	Win. 5-A	Palma	
Bronze Medal					
A. E. Hart, Cleveland, Ohio.	99-11v	Hoff-Martini	Fecker	Palma	
Bronze Medal					
E. F. Smith, Winter Haven, Fla.	99-8v	Springf. .22	Fecker	U.S.N.R.A.	
A. G. Percy, Schenectady, N. Y.	98-14v	Springf. .22	Fecker	U.S.N.R.A.	
G. J. Weidmaier, Dunkirk, N. Y.	98-14v	Springf. .22	Stevens-4	U.S.N.R.A.	

Name	Address	Score	Rifle	Sight	Ammunition
E. Johnson, Cleveland, Ohio.	98-12v	Hoff-Martini	Fecker	Palma	
P. A. Weidmaier, Dunkirk, N. Y.	98-11v	Springf. .22	Stevens-4	U.S.N.R.A.	
J. R. Satava, Cleveland, Ohio.	98-10v	Win. 52	Beld.-Mull	Palma	
P. E. Hood, Chicago, Ill.	98-10v	Win. 52	Win. 5-A	U.S.N.R.A.	
L. E. Klein, Massillon, Ohio.	98-9v	Win. 52	Win. 5-A	Palma	
F. Johansen, Joliet, Ill.	98-8v	Springf. .22	Win. 5-A	U.S.N.R.A.	
W. S. Gibbons, Melrose, Mass.	98-7v	Springf. .22	Fecker	Precision 200	
L. Bergren, Alexandria, Minn.	97-11v	Win. 52	Metallic	Palma	
E. D. Ritter, Portland, Oregon.	97-10v	Win. 52	Fecker	Palma	
E. Grosschel, Louisville, Ky.	97-9v	Win. 52	Win. 5-A	Palma	
H. Hubele, St. Louis, Mo.	97-9v	Win. 52	Fecker	Peters O.D.	
W. H. Sletzer, Cleveland, Ohio.	97-9v	Win. 52	Win. 5-A	Precision 200	
R. G. Weidenheim, Chicago, Ill.	97-8v	Springf. .22	Win. 5-A	Palma	
R. M. Kelley, Pasadena, Calif.	97-8v	Win. 52	Win. 5-A	Palma	
J. E. Faust, Dayton, Ohio.	97-1-3	Win. 52	Fecker	Peters T.H.	
F. G. Dana, Hunlock Creek, Pa.	96-6v	Win. 52	Beld.-Mull	U.S.N.R.A.	
C. A. Moore, Somerville, Mass.	96-3v	Win. 52	Malcolm	Precision 200	
J. R. Mooney, Chicago, Ill.	95-10v	Win. 52	Win. 5-A	Palma	
A. K. Friedrich, Ames, Iowa.	95-8v	Win. 52	Stevens-4	Precision 200	
C. O. Norcross, Worcester, Mass.	95-7v	Win. 52	Fecker	Palma	
C. C. Berkeley, Newport News, Va.	95-7v	Stevens 414	Stevens-4	U.S.N.R.A.	
E. H. Coleman, New Orleans, La.	95-6v	Win. 52	Fecker	Palma	
M. O'Connor, Racine, Wis.	95-6v	Savage	Win. 5-A	Precision 200	
L. E. Shadett, Birmingham, Ala.	94-1-2	Win. 52	Win. 5-A	U.S.N.R.A.	
C. S. Boatwick, Boston, Mass.	94-7v	Win. 52	Win. 5-A	Palma	
W. J. G. Land, Chicago, Ill.	94-2-5	Stevens 414	No record	Precision 200	
W. J. Hadlin, Schenectady, N. Y.	93-4v	Win. 52	Win. 5-A	Precision 200	
A. J. Davidson, Chicago, Ill.	93-1-3	No record	No record	No record	
C. J. Perry, Saginaw, Mich.	94-1-3	Win. 52	Win. 5-A	U.S.N.R.A.	
C. T. Giberson, Winter Haven, Fla.	94-3-3	Springf. .22	Stevens 414	Peters	
L. E. Garl, Birmingham, Ala.	92-10v	Stevens 414	Win. 5-A	Palma	
F. Fowler, Minneapolis, Minn.	92-3-3	Win. 52	Win. 5-A	U.S.N.R.A.	
E. B. Richardson, Elwood City, Pa.	91-1-3	Springf. .22	Fecker	U.S.N.R.A.	
G. Satava, Saginaw, Mich.	91-1-3	Win. 52	Fecker	Palma	
F. C. Payne, Los Angeles, Cal.	91-2-3	Win. 52	Win. 5-A	U.S.N.R.A.	
J. Muehlbauer, St. Louis, Mo.	91-3-3	Win. 52	Win. 5-A	Precision 200	
J. F. Woolshlager, Castorland, N. Y.	91-3-3	Savage	Win. 5-A	Precision 200	
V. J. Huff, Racine, Wis.	90-2-3	Win. 52	Win. 5-A	Precision 200	
H. Morrell, New Haven, Conn.	90-3-3	Win. 52	Win. 5-A	U.S.N.R.A.	
C. J. Chamberlain, Chicago, Ill.	87	Stevens 414	No record	Precision 200	
A. B. Sprague, Worcester, Mass.	87	Win. 52	Metallic	Marksmen	
C. H. Johnson, Upper Darby, Pa.	87	No record	No record	No record	
W. McNamers, Jacksonville, Fla.	85	Winchester	Win. 5-A	U.S.N.R.A.	
L. A. Pope, Los Angeles, Calif.	84	Springf. .22	Fecker	Precision 200	
D. H. Nelson, Ontario, Calif.	83	Win. 52	Fecker	U.S.N.R.A.	
G. K. Woods, Castorland, N. Y.	83	Savage	Win. 5-A	Palma	

MATCH NO. 7, SMALL BORE GRAND AGGREGATE

Name	Address	Score	Rifle	Sight	Ammunition
J. D. Poland, Wilmington, Ohio.	399	Win. 52	Win. 5-A	Precision 200	
(Gold Medal)	391				
	100				
	890				
A. E. Hart, Cleveland, Ohio.	395	Hoff-Martini	Fecker	Palma	
(Bronze Medal)	396				
	99				
	890				
C. E. Hicks, Piqua, Ohio.	888	Win. 52	Fecker	Peters T.H.	
(Bronze Medal)					
M. E. McManes, Piqua, Ohio.	398	Win. 52	Fecker	Peters T.H.	
(Bronze Medal)	389				
	100				
	887				
I. O. Moore, New Cumberland, Ohio	399	Win. 52	Metallic	Palma	
(Bronze Medal)	388				
	100				
	887				
R. M. Kelley, Pasadena, Calif.	885	Win. 52	Win. 5-A	Palma	
(Bronze Medal)					
F. C. Kimmel, St. Louis, Mo.	881	Win. 52	Fecker	U.S.N.R.A.	
(Bronze Medal)					
L. E. Klein, Massillon, Ohio	393	Win. 52	Win. 5-A	Palma	
Bronze Medal	389				
	98				
	880				
A. K. Friedrich, Ames, Iowa	397	Win. 52	Stevens-4	Precision 200	
Bronze Medal	388				
	95				
	880				
E. Johnson, Cleveland, Ohio.	389	Hoff-Martini	Fecker	Palma	
Bronze Medal	390				
	98				
	877				
W. J. G. Land, Chicago, Ill.	395	Stevens 414	No record	Precision 200	
	388				
	94				
	877				

PISTOL MATCH NO. 1, TYRO SLOW FIRE MATCH

Name	Address	Score	Arm	Ammunition
J. W. Aitken, Nekoma, N. Dakota	333	S. & W. Olympic	U.S.N.R.A.	
Silver Medal				
J. Bernson, Ancon, Canal Zone	386	S. & W. .22	Palma	
Bronze Medal				
J. L. Wiggins, Luther, Okla.	385	Colt .22	U.S.N.R.A.	
Bronze Medal				
G. Grieshamer, Baltic, Conn.	385	S. & W. .22	Precision 500	
Bronze Medal				
W. S. Gibbons, Melrose, Mass.	384	S. & W. .22	Remington	
Bronze Medal				
E. S. Carpenter, Owl's Head, N. Y.	382	S. & W. .22	Palma	
Bronze Medal				
A. M. Reynolds, Schenectady, N. Y.	381	Stevens 35	U.S.N.R.A.	
W. F. Coultas, Iowa City, Iowa	381	Colt .22	U.S.N.R.A.	
Bronze Medal				
R. Z. Kirkpatrick, Balboa Heights, C. Z.	380	Reising .22	Palma	
Bronze Medal				
W. Boggs, Balboa Heights, C. Z.	379	S. & W. .22	Palma	
B. C. Flanders, Waitsburg, Wash.	372	Colt .22	U.S.N.R.A.	
C. J. Koehler, Saginaw Mich.	367	Colt .22	Western	
L. S. Townsend, Ancon, C. Z.	365	S. & W. .22	Palma	
J. A. Baries, Cumberland, Md.	363	S. & W. .22	Palma	
M. Shriver, Cumberland, Md.	363	S. & W. .22	Palma	
C. J. Perry, Saginaw, Mich.	362	S. & W. .22	U.S.N.R.A.	
B. F. Kuller, Ancon, C. Z.	361	S. & W. .22	Palma	
Martha E. John, Cristobal, C. Z.	358	S. & W. .22	Palma	
R. R. Bastian, New Orleans, La.	356	S. & W. .22	Palma	
W. D. Ways, Cumberland, Md.	353	Colt .22	U.S.N.R.A.	
M. O'Connor, Racine, Wis.	351	Colt .22	U.S.N.R.A.	
F. F. Braeis, Cumberland, Md.	347	S. & W. .22	U.S.N.R.A.	
W. M. Perry, Columbia, S. C.	337	No record	No record	
L. M. Reihsen, Ontario, Calif.	329	Colt .22	Winchester	

PISTOL MATCH NO. 2, TIMED FIRE PISTOL MATCH

Name	Address	Score	Arm	Ammunition
S. E. Worley, Pasadena, Calif.	546	Colt .22	Palma	
Silver Medal				
R. M. Kelley, Pasadena, Calif.	505	Colt .22	Palma	
Bronze Medal				
J. Bernson, Ancon, Canal Zone	497	Reising .22	Palma	
Bronze Medal				
W. W. John, Cristobal, C. Z.	484	S. & W. .22	Palma	
Bronze Medal				
R. Z. Kirkpatrick, Balboa Heights, C. Z.	476	Reising .22	Palma	
Bronze Medal				
J. W. Aitken, Nekoma, N. Dak.	473	S. & W. .22	U.S.N.R.A.	
Bronze Medal				
C. J. Koehler, Saginaw, Mich.	459	Colt .22	Western	
Bronze Medal				
C. J. Perry, Saginaw, Mich.	443	No record	No record	
Bronze Medal				
J. M. Sorensen, Perth Amboy, N. J.	439	Colt .22	Western	
Bronze Medal				

MATCH NO. 4, FREE PISTOL MATCH

Name	Address	Score	Arm	Ammunition
E. Johnson, Cleveland, Ohio	562	Gill-Hoff.	U.S.N.R.A.	
Gold Medal				
S. E. Worley, Pasadena, Calif.	551	S. & W. .22	Palma	
Bronze Medal				
C. R. Burdette, Baltimore, Md.	544	S. & W. .22	U.S.N.R.A.	
Bronze Medal				
P. R. Mason, Ayer, Mass.	535	S. & W. .22	Precision 500	
Bronze Medal				
R. M. Keley, Pasadena, Calif.	535	S. & W. .22	Palma	
Bronze Medal				
F. G. Dana, Hunlock Creek, Pa.	526	Nied-Hoff. .22	U.S.N.R.A.	
Bronze Medal				
J. Bernson, Ancon, Canal Zone	523	S. & W. .22	Palma	
Bronze Medal				
W. W. John, Cristobal, C. Z.	507	Swiss-Luna	Palma	
Bronze Medal				
O. Lindo, Panama, R. P.	501	German-Luna	Palma	
Bronze Medal				

Not Reported

E. Johnson, Cleveland, Ohio. C. T. Westergard, Whiting, Iowa.
CREEDMOOR COUNT

PISTOL MATCH NO. 3, TYRO TIMED FIRE MATCH

Name	Address	Score	Arm	Ammunition
W. F. Coultas, Iowa City, Iowa	382	Colt .22	U.S.N.R.A.	
Silver Medal				
J. Bernson, Ancon, Canal Zone	374	Reising .22	Palma	
Bronze Medal				
R. Z. Kirkpatrick, Balboa Heights, C. Z.	373	Reising .22	Palma	
Bronze Medal				
B. B. Bulawa, Chicago, Ill.	361	Colt .22	U.S.N.R.A.	
Bronze Medal				
W. D. Ways, Cumberland, Md.	358	Colt .22	U.S.N.R.A.	
Bronze Medal				
E. S. Carpenter, Owl's Head, N. Y.	355	S. & W. .22	Remington	
Bronze Medal				
C. J. Koehler, Saginaw, Mich.	353	Colt .22	Western	
Bronze Medal				
C. J. Perry, Saginaw Michigan	349	S. & W. .22	U.S.N.R.A.	
Bronze Medal				
Martha E. John, Cristobal, C. Z.	349	Colt .22	Palma	
Bronze Medal				
W. S. Gibbons, Melrose, Mass.	347	Reising .22	U.S.N.R.A.	
Bronze Medal				
M. O'Connor, Racine, Wis.	342	Colt .22	U.S.N.R.A.	
L. S. Townsend, Ancon, Canal Zone	330	Reising .22	Palma	
M. Shriver, Cumberland, Md.	310	Colt .22	Palma	
W. M. Perry, Columbia, S. C.	255	No record	No record	

Not Reported

S. M. Martin, Ashland, Ohio. M. E. Bass, Tulsa, Oklahoma.

MATCH NO. X, PISTOL QUALIFICATION

Pistol Experts

L. O. Moore, New Cumberland, O.	557	J. Bernson, Ancon, Canal Zone	545
W. W. John, Cristobal, C. Z.	537	E. J. Canada, Luther, Okla.	535
M. C. Engel, Luther, Okla.	532	J. L. Wiggins, Luther, Okla.	526
C. J. Moore, Bristol, Conn.	526	Jim Barlow, Halstead, Kansas	525
W. F. Coultas, Iowa City, Iowa	523	S. E. Worley, Pasadena, Calif.	521
C. A. Moore, Somerville, Mass.	520	R. Z. Kirkpatrick, Balboa, C. Z.	517
J. W. Aitken, Nekoma, N. D.	515	Martha E. John, Cristobal, C. Z.	510
C. J. Perry, Saginaw, Mich.	504	A. Arthur, Fort Davis, C. Z.	503
W. S. Gibbons, Melrose, Mass.	500	W. Boggs, Balboa, C. Z.	498
C. J. Koehler, Saginaw, Mich.	494		

Pistol Sharpshooter

M. O'Connor, Racine, Wis.	460	W. H. Boynton, Berkeley, Calif.	448
J. O. Norcross, Worcester, Mass.	440	B. F. Kuller, Ancon, C. Z.	443

Unqualified

H. J. Laughlin, Wilkingsburg, Pa.

PISTOL MATCH NO. 5, INDIVIDUAL PISTOL CHAMPIONSHIP

Name	Address	Score	Arm	Ammunition
T. K. Lee, Birmingham, Ala.	559	Smith & Wesson	Peters O.D.	
Gold Medal		Colt .22		
L. O. Moore, New Cumberland, Ohio	559	Colt .22	Palma	
Silver Medal				
O. L. Garl, Birmingham, Ala.	539	Smith & Wesson	Peters O.D. & U.S.N.R.A.	
Silver Medal		Colt .22		
S. E. Worley, Pasadena, Calif.	536	Smith & Wesson & Colt .22	Palma	
Bronze Medal				
R. M. Kelley, Pasadena, Calif.	529	Smith & Wesson & Colt .22	Palma	
Bronze Medal				
J. Bernson, Ancon, Canal Zone	521	Reising Auto	Palma	
Bronze Medal				
A. Graff, Ft. Davis, C. Z.	501	Colt Auto	U.S.N.R.A.	
Bronze Medal				
P. R. Mason, Ayer, Massachusetts	493	Smith & Wesson & Colt .22	Palma	
Bronze Medal				
E. S. Carpenter, Owl's Head, N. Y.	491	Smith & Wesson	Remington	
Bronze Medal				
J. W. Aitken, Nekoma, N. D.	487	Smith & Wesson	U.S.N.R.A.	
H. E. Brill, Tulsa, Oklahoma	480	Colt Auto	Palma	
Jim Barlow, Halstead, Kansas	480	S. & W. & Colt	U.S.N.R.A.	
L. H. Anderson, Chicago, Ill.	478	Colt Auto	Palma	
W. W. John, Cristobal, C. Z.	474	S. & W. & Colt	Palma	
C. J. Perry, Saginaw, Mich.	454	No record	No record	
C. J. Koehler, Saginaw, Mich.	453	Colt Auto	U.S.N.R.A.	
W. H. Boynton, Berkeley, Calif.	453	Smith & Wesson	Peters T.H.	
C. M. Fell, Massillon, Ohio	402	Colt Auto	Palma	
L. E. Klein, Massillon, Ohio	352	Colt Auto	Palma	

CREEDMOOR COUNT

W. J. R. C. GALLERY PROGRAM

The Winchester Junior Rifle Corps has announced an indoor program for its units extending from September, 1925, to May, 1926. Many N. R. A. civilian clubs have found it advisable to encourage the junior element in their localities to get into the shooting game. The W. J. R. C. Program provides a series of individual and team matches for the youngsters, as well as a kind of qualification course which will keep them interested.

Recruits of the right type are the biggest problem of most civilian clubs. Encourage the youngsters, and this problem is solved. It is recommended to every civilian club which has among its membership a man willing to take the time to work with a bunch of youngsters, that they get in touch with Mr. B. M. Russel, National Executive of the W. J. R. C. at New Haven, Connecticut.

HERE'S A MATCH

Lieut. Col. William R. Brooks, Sig-Res., signal officer of the 89th Division, also president of the Nebraska Department of the Reserve Officers' Association, is organizing a divisional pistol team of six members, selected from the states of South Dakota, Nebraska and Kansas. He has issued a challenge to all comers, for a match to be fired during the National Convention of the R. O. A., Kansas City, Mo., October 1 to 4. Using regulation pistols, the qualification course will be fired at Fort Leavenworth, Kansas.

The picked team will be glad to meet any team from any other state, division or corps area, or any kind of a mixed team that may be selected or accepts the challenge. Especially do the members desire to met any crack pistol shots who may be among the delegates to the Convention.

Unless the challenge is accepted by September

20 the state department of the R. O. A. will not go to the expense of taking the team to Kansas City.

Full particulars may be obtained by writing to Colonel Brooks, 538 Securities Bldg., Omaha, Nebraska.

* * *

"A CHIP OFF OLD BLOCK"

Charles Askins, Junior, the son of our Shotgun Expert has been a student in the Citizen's Military Training Camp here at Fort Sill for the past three weeks and succeeded in shooting sufficiently well with the rifle to be selected one of the four students who were selected to represent this Camp at Camp Perry, Ohio. Charles left this morning full of determination and as tickled as a June Bride over his success and prospects. Let us keep our eyes on this young man and watch him grow.

THE DOPE BAG



A FREE SERVICE TO TARGET, BIG GAME AND FIELD SHOTS ALL QUESTIONS BEING ANSWERED DIRECTLY BY MAIL

Rifles and Big Game Hunting: Major Townsend Whelen Pistols and Revolvers: Major J. S. Hatcher
Shotgun and Field Shooting: Captain Charles Askins

Every care is used in collecting data for questions submitted, but no responsibility is assumed for any accidents which may occur.

THE .44-40

I WOULD like your recommendation for the caliber of rifle to be used on deer in the Maine woods. The nature of the country there is such that deer are shot at very close range, thirty to fifty yards not being uncommon. The rifle which I prefer is one of the lever action Winchesters. As this rifle will also be used for small game, it is undesirable to have a heavier caliber than will successfully kill deer. I like very much the Model 53 Winchester. Would this gun in .44 caliber be successful on deer under the above mentioned condition? If not, what model and caliber would you recommend for this use? C. R. B., Wilkesburg, Pa.

Answer (by Major Whelen). There is no question but that the lever action Winchester handling the .44 W. C. F. cartridge is perfectly satisfactory for deer in eastern wooded country. They have been used for almost half a century with perfect success on such game. The Winchester Model 53 particularly is a handy, light, neat, and easily operated rifle. It is just as good a deer rifle for Maine as any other rifle made and it is a whole lot better than 90 per cent of the other rifles used for deer. You can rest assured that you cannot get any better deer rifle than this one. Of course a little bit depends upon personal preference and a whole lot upon fit of stock. Fit of stock is of great importance, particularly in snap shooting in thick timber but it is easily possible to place a stock of interior dimensions on the Winchester Model 53 rifle. I recently made a stock for a rifle of mine of this model in about eight hours' time and it does splendidly.

AN OLD TIMER

I HAVE a .40-90 Remington Hepburn which I like quite well except for its immense weight. Would it be hurting the gun in either accuracy or power to cut it down to say twenty or twenty-two inches?

Is there any commercial source from which to obtain .40-90 ammunition? My empties are about worn out and I can't seem to run on to any more.

I have a Winchester single shot .32-20. Is this the same action that was on the .45-70 W. S. S.? It seems to be big enough. If so would it handle the .50-70? L. T., Walla Walla, Washington.

Answer (by Major Whelen). Black Powder burns very slowly compared with Smokeless. A large charge like that in a .40-90 cartridge will require a barrel 30 or 32 inches long to burn it with good efficiency. With a very short barrel, say 20 or 22 inches, you would be driving about half of your powder out of the muzzle before it burned and would have very low velocity.

There were two Winchester single shot breech mechanisms made. A light one which was standard for .22 caliber and for the .32-20, .38-40,

and .44-40 cartridges and a heavy action which was standard for the larger heavier cartridges. Sometimes the rifles were made for the smaller cartridges to special order, with the heavier action but the lighter action was not safe with the heavier cartridges. With the light action the sides of the receiver slope downward from the front of the breech block. With a heavier action the sides of the receiver remain at full height until about an eighth inch in rear of the breech block.

BURST PRIMERS

WILL you kindly tell me through the AMERICAN RIFLEMAN, just what happens to the mechanism of a bolt action rifle that causes the bolt to lock when a primer blows out? Have had it happen with a Newton .256, Savage .250-3000, also a Springfield. Bolt handle can be raised only with extreme difficulty, sometimes has to be hammered to the opening position and the shell loosened from its grip in the barrel by the use of a steel cleaning rod from the muzzle.

Have had cases where no amount of tapping with steel cleaning rod from the muzzle would loosen the shell so long as the butt of the rifle was on the ground, but if the rifle was held in a vertical position after the bolt handle was raised, rifle butt free from ground and steel cleaning rod dropped down barrel by its own weight, the shell would loosen and come out.

I understand perfectly that the blown primer indicates excess pressure with gas leaking back into bolt mechanism. What I want to know is, why this gas leakage locks the bolt? It is easy to understand that the excess pressure drives the shell against the walls of chamber, causing shell to stick in chamber, but what causes difficulty in raising bolt handle? After handle is up shell is still stuck.

Only theory I have is, that this gas may drive the oil out from around the locking lugs and perhaps roughen same. F. D. P., Earlville, N. Y.

Answer (by Major Whelen). When the primer blows out of the cartridge case it seldom indicates any trouble with the primer itself. Rather it indicates that the cartridge case has been too soft at its head for the pressure exerted and the cartridge case has swelled, permitting the primer to drop out. At the same time the swelling of the head has locked the cartridge case tight in the chamber and has also tightly unbinged the head of the case against the breech bolt so that the bolt handle can be raised and the cartridge case extracted only with extreme difficulty.

The amount of pressure that a cartridge case will stand depends upon the grain structure of the brass, that is the quality of the brass and the anneal given it in manufacture. Our best cartridges in such calibers as .250-3000 and .30-06 should stand about 53,000 pounds pressure without swelling of the head or without losing

their primers, but above this there is constant danger that this may occur. An excessive case of swelled head sometimes results in so much leakage of gas to the rear that the breech mechanism of the rifle is completely demolished. Some cartridge cases are defective in that they will not stand pressure of more than about 40,000 to 45,000 pounds without swelling at the head.

THE .303 ROSS

I AM a member of the N. R. A. in good standing. I wish to ask a question and if you will be kind enough to answer I will certainly be obliged to you. First, I will appreciate any information you may give me on the .303 Ross Rifle, for sale by the D. C. M. Also will the bolts of the 1916, and the 1905 models interchange? Also what condition is the gun in? Do you think it is a good buy? P. B., Corpus Christi, Texas.

Answer (by Major Whelen). The .303 Ross rifles that I have seen have all been excellent rifles. Apparently all of them have been used to drill with, and show a small amount of wear outside, but have never been fired and are in perfect condition of bore. All that I have seen are of the older model without the bridge over the rear of the receiver. I don't believe that the bolts on any of them are strictly interchangeable, and I don't think that the 1916 and 1905 bolts will interchange at all, although I am not positively certain of this. It is most difficult to make bolts that are perfectly interchangeable. Even the bolt of the Springfield is not strictly interchangeable. It is true that any Springfield bolt will work in any Springfield rifle in an emergency, but when you change the bolt you change the head space more or less, and an excessive change in headspace in a high-intensity rifle is liable to be a very dangerous thing. I imagine that this condition pertains with the Ross as well as other rifles.

The Ross is a good buy. Next to the Krag rifle it is the best buy among all the newly obsolete military rifles. It remodels nicely into a sporting arm. Lyman has an excellent receiver sight for it (not listed in catalogue). It is safe, accurate and rapid in operation.

THE .44-40

I AM wanting a low priced rifle for deer hunting in Pennsylvania or Virginia where all game is shot under 100 yards. What can you tell me of the accuracy of the '92 Model Winchester using the new Remington 44 Hi-Speed hollow point? How will the "punch" from this bullet compare with the .30-30 at ranges from 50 to 100 yards?

I have used many different high power rifles in the western mountains but for eastern short range work I want to be considerate of the other fellow, consequently I want less velocity and all the killing qualities possible with a low power rifle. E. R. F., Marion, Ohio.

Answer (by Major Whelen). The Winchester '92 rifle is a thoroughly satisfactory rifle, light, handy, and reliable. In .44-40 W. C. F. caliber it is just as satisfactory as any rifle for Pennsylvania deer hunting, and much more convenient, handy, and quick of action than most of them.

With .44 W. C. F. smokeless, and .44 W. C. F. High Velocity cartridges of Winchester make it gives about 8 inch groups at 200 yards in the accuracy tests at the Winchester factory. I do not know what accuracy is obtainable with the new light bullet, hi-speed cartridges, but I imagine about the same. However I think it would be wise to rely on the old High-Velocity cartridge for all hunting, as we know that it is perfectly reliable and satisfactory on deer up to 200 yards at least. It has always seemed to me that the Hi-Speed cartridges have been gotten out to sell over the counter to people who have heard the magic word, and want the highest speed they can get regardless of anything else. They sell and make good money for their manufacturers. This is a high-speed age. But it still remains true that a little less speed and a little more reliability gets one farther.

A FEW DEFINITIONS

IN your issue of December 1st, Major Whelen named a number of books on American hunting and said that they were books of the Boone & Crockett Club which were published by Harper & Bros. As I fail to find any of these books mentioned in their trade list, I should like to know where they might be obtained; or possibly they are out of print?

Is there any arrangement by which open sights could be used on the Sporter Springfield. Do you believe they would be best for shooting in timber?

What is meant by the Mauser action. Does it refer to that used on the Mauser alone or does it refer to all bolt actions?

What is an "Express" rifle?

What is a "Cordite" rifle? A. E. E., Krum, Texas.

Answer (by Major Whelen). The Boone and Crockett Club books, published some years ago by Harpers, can be obtained from the book department of Forest and Stream, 221 West 57th Street, New York, N. Y. Send to them for their price list of books.

An open rear sight can be fitted to the Springfield sporting type of rifle, but it should always be fitted by a base secured to the barrel by a barrel band, and the barrel should never be slotted for the sight. To slot the barrel would probably considerably decrease the accuracy of the rifle. It is a hard job, and thus very expensive, probably costing from \$15.00 to \$25.00 to do it in a proper manner. Griffin & Howe, 234 to 238 East 39th Street, New York, N. Y., are prepared to do work of this kind. Open sights are obsolete as they are very much inferior to the Lyman peep sight or to a good hunting telescope sight for every purpose, but like all obsolete things, they still have their admirers. They are less accurate, slower to use, and cannot be seen in such dim lights as a good peep sight of the Lyman type.

The Mauser breech action is made by three or four firms in Germany, and perhaps in other countries. Originally it was made for the German Mauser Military rifle, and rifles having Mauser breech actions have been adapted as the military weapons of a number of other nations. Also this breech action has been used for a multitude of sporting rifles of various calibers and types, all of which are properly called Mauser rifles, but also require other description by which to fully identify them. The word "Mauser" alone simply means that a rifle has a Mauser type of breech action. The Mauser breech action is only one of a great number of types of bolt actions, but is perhaps the best known, and most efficient bolt action. The Springfield action is really a modified Mauser differing only in some minor details from the Mauser.

Strictly speaking an "Express" rifle is a black powder rifle having a velocity greater than that usually given with black powder, the rifle using a very large charge of powder and a light bullet. Black powder rifles usually have velocities not exceeding 1500 f. s., but an Express rifle usually has a velocity running from 1750 f. s. to about 2,000 f. s. The word Express has in later years been used to mean any high velocity rifle, so that really today it does not mean much as all modern rifles have high velocity.

A "Cordite" rifle is an English rifle designed to use Cordite powder, which is a nitroglycerine smokeless powder designed to give high velocities with low pressure. Almost all sporting rifles manufactured in England for the past twenty years have been cordite rifles. Really the term is almost the same as our term "Smokeless rifle."

SIGHT SETTINGS OFF

IHAVE recently purchased from the N. R. A. a selected star-gauged Springfield Model 1913 rifle. On taking it to the 200-yard range I found it required a setting of 400 yards on the regular

military sight to place its shots in the bull. There was no wind and the temperature stood about 50 degrees Fahrenheit.

Would you advise me to file the front sight down a little or let things go as they are? The zero windage was perfect.

When I reached home and started to clean it I had one tough job. I had fired about forty rounds and at the muzzle I could see a little fouling. After running two patches of flannel soaked in boiling water through the bore and drying it, I ran sixteen full of Crystal Cleaner through and dried it out leaving Hoppe's No. 9 in all night.

In the morning a patch came out green and it took about sixteen more before it was clean. Now to make things short what I want is a positive cleaning solution, either commercial or to be prepared by a druggist, that will keep my barrel in perfect condition and not have me wondering all night whether it really is clean.

Can I get as good results with a micrometer sight adjuster on the military sight as I could with a Lyman 48? Are Lyman sights allowed in matches at Camp Perry or any matches the Army or N. R. A. has jurisdiction over?

What would be a good reduced load for my rifle using 170-grain 6 degree boat-tail or 150-grain service bullet?

I would like a very accurate load up to 100 yards at least and something that would not go into the next county. W. K. B., Fall River, Mass.

Answer (by Major Whelen). The fact that your Springfield rifle requires an elevation of 400 yards when shooting with a certain ammunition at 200 yards is not at all uncommon. With some other type of ammunition it may require only 200 yards of elevation for that range. Again, on some other day, with the same ammunition you are now using you may need only 200 yards, so much does a man's eyesight differ from day to day and in different lights. I would not advise you to file the rear sight down. Better keep a score book with a complete record of all your sight settings, and all other permanent data.

Your cleaning experience sounds to me as though you were using war time ammunition with the old bullets jacketed with cupro-nickel. At high velocities these old cupro-nickel bullets give bad metal fouling. Under separate cover I am sending you a copy of a booklet on cleaning which will give you full information. Better confine yourself, with full loads, to the National Match ammunition which uses bullets jacketed with gilding metal, and does not give any metal fouling.

Practically as good accuracy at black and white targets can be obtained with the military sight as with the Lyman. The micrometer sight adjuster permits accurate and positive sight adjustment, and positive movement of sights, and should always be used to adjust and record your sight setting if you wish to do the best work. The Lyman sight is only permitted where the conditions of the match permit "any rifle," and cannot be used in matches requiring the service rifle "as issued."

The very best reduced load for 100 yard shooting consists of a charge of 18 grains of du Pont No. 80 powder and the 150 grain full jacketed service bullet. It is not too powerful and shoots with excellent accuracy.

THE OLD .45 SHARPS

ALMOST all of my life, (sixty-three years) I have been a full-fledged "rifle crank." In fact the rifle is my idol and at present I have a small armory of seventeen guns, but this letter is written to you for two purposes. One is to congratulate you upon your book, "The American Rifle." In that work you have built for yourself an enduring monument. It is my constant companion and if I told you how often I ponder over its pages in the evenings, you probably would not believe me.

The other purpose of this letter is to ask you for a little information on the cartridges for the Sharps rifle. I was recently presented with two magnificent specimens of the Sharps Borchard Hammerless Rifle, fully equipped with Vernice sights, etc. One of these rifles is a .40 and the other is a .45 but I am somewhat in doubt as to whether there are, today, any cartridges in the market that will properly function in these rifles. If you can give me this desired information, as a fellow rifleman, I will feel very grateful to you and I desire here and in advance to thank you for the same. C. A. R.

(Answer by Major Whelen). I have your letter of March 30th. The Sharps Borchard hammerless rifle in .40 and .45 calibers was made for the following cartridges:

.40-50 Sharps, straight shell, 265 grain patched bullet, 45 grains of powder.

.40-70-330 Sharps Straight, 330 grain grooved bullet, 65 grains of powder, also the same cartridge with patched bullet.

.40-90 Sharps Straight, 370 grain patched bullet, 90 grains of powder.

.45-70 U. S. Government (old Springfield) cartridge, using various weights of grooved bullet.

.45-75 Sharps, 420 grain patched bullet, 75 grains of powder.

.45 Sharps Special, 2 4-10-inch shell.

.45 Sharps Special, 2 6-10-inch shell.

.45 Sharps Special, 2 7/8-inch shell.

.45 Sharps Special 3 1/4-inch shell.

These last four were usually loaded to order with varying powder charges from about 70 grains in the shorter shell, to as much as 120 grains in the longest shell, and with bullets, usually patched, varying from 500 to 550 grains.

All of the above cartridges in which patched bullets are indicated, could also be used with grooved bullets, and were often so loaded by riflemen. The old Ideal Manufacturing Company of New Haven, Conn., made loading tools and bullet molds for all these cartridges. There were a great variety of bullets.

None of these cartridges (except the .45-70 U.S.G.) have been made for at least 30 years, and never will be made again. Quite generally the supply in the hands of the various cartridge companies has been exhausted, and about the only way to obtain these cartridges now is to advertise for them. If you could find some shells in good condition you could have reloading tools and bullet molds made, but the expense would be rather heavy. The chances are that any loaded ammunition that you could now obtain would be so old as to be almost worthless, except to fire it off and save the shells.

Unfortunately the Sharps Rifle Company did not always mark their barrels with the exact description of the cartridge they used. Sometimes they stated the caliber on the barrel, but nothing to indicate what particular cartridge or that caliber the barrel was chambered for. The only way to positively determine what cartridge your rifles are chambered for is to make a sulphur mold or cast of the chamber, then to measure the cast carefully, length of chamber, and diameter at the head and front, and send these dimensions to the Winchester Repeating Arms Company, or to Remington Arms Company, and ask them what cartridge the rifle uses. If they cannot tell you perhaps I might be able to work it out. The method of making a sulphur mold or cast of the chamber is described on Page 448 of my book "The American Rifle."

Most riflemen having first class Sharps Borchard rifles have had new barrels for more modern cartridges placed on them. The breech actions are excellent, and will take a number of modern cartridges using rimmed cases, up to about the .30-40 Krag cartridge. For high power cartridges, however, it is necessary to bush the firing pin hole in the breech block, and make a new firing pin. The Niedner Rifle Corporation, Dowagiac, Michigan can furnish you with excellent modern barrels for this rifle, made to order, and can also properly fit a new firing pin.

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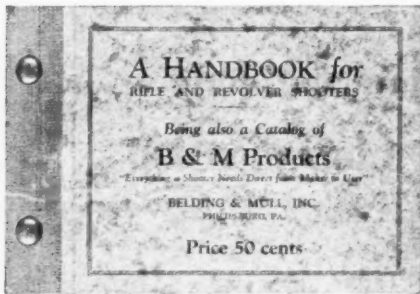
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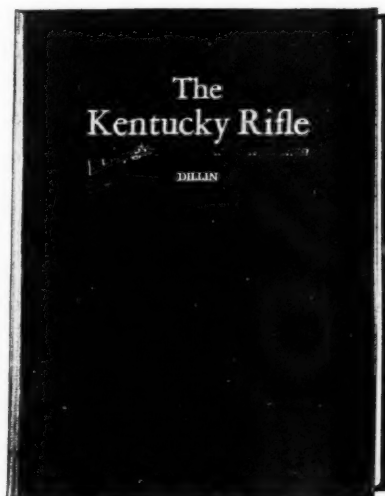
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I have not yet had time to read it through; but the plates alone are astonishingly rich in authentic material.

This is the choicest treasure among all the books I have accumulated in a lifetime given largely to the study of American frontier history and to the literature of the out-of-doors. And I prize especially your own portrait and the dedication, so aptly worded, to the old firearm itself.

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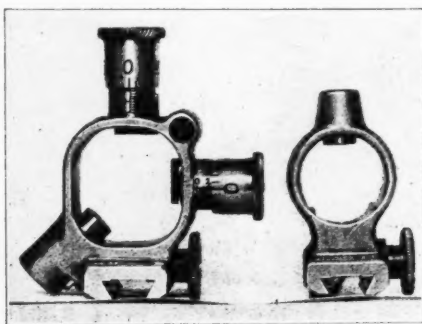
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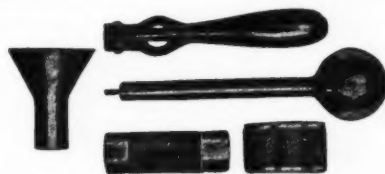
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Paid Insertions. Non-subscribers or those who have already made use of the subscriber's privilege may take advantage of these columns at a cost of \$1.00 per inch or part thereof. No advertisement for less than \$1.00 accepted. Advertisements will be set in 6 point solid. They should be in the publication office two weeks prior to the time appearance is desired.



FOR SALE—Ithaca 5-E single trap in fine condition. 34 inch barrel full pistol grip recoil pad. Stock 14x1 1/2x2, fine leather case included. Price \$100.00. Stanley M. Lukehart, 55 E. Long Ave., Du Bois, Pa. 289

TRADE—40 power Vion scope, Fiala .22 cal. target pistol with three barrels and detachable stock, Stanley 45 plane. **WANT**—Winchester 5-A scope, 8x30 binoculars. J. R. Buhrmiller, Fortine, Montana. 291

FOR SALE OR EXCHANGE—Heavy barrel Springfield, 28 inch barrel, weight of rifle without sight or sling, 10 3/4 lbs., pistol grip checked stock, telescope blocks, drilled and tapped for Lyman 48 sight, accuracy guaranteed, price \$40.00 or new National Match "as issued" service rifle. Box 12, THE AMERICAN RIFLEMAN. 290

FOR SALE—One very fine Colt Automatic .45 caliber, \$20.00. One .25-20 Winchester Model 1895, leather case, reloading tools with Lyman's sights front and rear, \$20.00. One ICS Course in pattern making, cost \$78.00—will sell for \$35.00 or .250 Colt Savage or 25 Remington Model No. 14-A. G. A. Countryman, Sandusky St., Ashland, Ohio. 287

FOR SALE—Stevens Favorite Rifle. Fitted with 414 heavy barrel, globe sights, and fancy walnut stock. Finely checked, very accurate. \$25.00. Two late model stocks, 52 Winchester target rifle, \$5.00 each. Special stocks made to order for Model 52 Winchester target rifle. M. S. Hendricks, 255 So. Lincoln Ave., Aurora, Illinois. 291

TRADE—Krag carbine, bluing intact on receiver, both inside and out, a good looking gun, equipped with sling swivels and Lyman Ivory Bead front and No. 34 windgauge rear (with target disc), very accurate and in excellent condition all the way through. Will trade for a 9 mm. Luger with either 6 inch or 8 inch barrel. Pistol must be first class, with perfect barrel and perfect in function. R. A. Kieska, Drawer 109, Bay City, Texas. 286

FOR SALE—Brand new Hoffman Arms .250-2000 cal. De Luxe Mauser, 26 inch stiff nickel steel barrel to fire all bullets same sighting, gold bead in hood, Hoffman ramp sight, not fitted with rear sight yet. Italian walnut Whelen type stock, horn tip, butt pistol grip cap and trigger guard. A fine engraved rifle. Made to shoot all loads accurately. Weight 8 1/2. Cost to duplicate \$225.00, sell new and unsighted \$125.00. New unfired Krieghoff Mauser .375 cal. hi-velocity, heavy game rifle, 26 inch barrel. Italian walnut, fine checking, two boxes cartridges, set trigger, open sights, weight 8 1/2, sell \$75.00. New 25x35 Zischang barrel, 26 inch nickel, 12 inch twist, rebuilt case hardened. Sharps hammerless action, Circassian walnut shotgun stock of finest quality. No. 103 Lyman micrometer peep ivory front, close chambered target on chuck rifle, weight 9 pounds, cost \$150.00 to build, sell \$85.00. Not sighted in yet. Genuine Swiss Martina action and fine offhand stock set triggers, spur lever. Will take any large cartridge. Another fine Martina action and stock, single trigger. Will take 30x40 Krag cartridge, new condition, \$15.00. Pacific ballard action plain, needs bluing, fine double set triggers, plain stock, \$20.00. Service Springfield .30-06, stock scratched but serviceable and reliable, at \$20.00. Kentucky cap rifle, built for beef matches, 18 pound 40 inch barrel, just rebuilt, muzzle to butt, re-finished, reamed, rifled and lock built and case hardened. Wind gauge peep and globe sight. Has won more prizes than any competing breech loader for last ten years, .50 cal., charge cups, molds, caps, two fine rods, a rare type for collector at \$35.00, perfect inside. H. Lovell, 2809 Bellefontaine St., Indianapolis, Indiana. 297

WANTED—Percussion Colts: 9 inch barrel, six shot, caliber .44 cylinder 2 1/4 long, square back trigger guard, length about 16 inches. Loading lever, round cylinder slots. No trigger guard, folding trigger, round cylinder slots, marked, "Patent Arms Mfg. Co., Patterson, N.J. Colts Pat." Square back trigger guard, no loading lever, round cylinder slots, cal. 31. Write for photos. Examine your percussion revolvers also ask your friends to let you see theirs, if any answer the above descriptions write me, I pay highest prices. I am a collector, not a dealer. **FLINT LOCK PISTOLS**: Lock plate marked "Harner's Ferry 1806 or 1807 Eagle and U. S." Market "U. S. Springfield 1818." Lock plate marked "U States under Eagle also S. North Berlin, Conn." S. H. Croft, 33rd & Market Sts., Philadelphia, Pa. 8

SHIFT WITH THE HOUSE OF SHIFF THE GUNMAN, N. Woodstock, N. H. This is our 54th year, and best. I have never shipped a gun I did not personally back EXCEPT NEW. DIRECT to your order. I never carry because they are cheap but only because they are RIGHT. One charge. One price to ALL. If you have not shipped your stamp, if you are not fighting fanatics, if we have to smuggle our guns as you do a drink THEN SHIFF'S NEW YEAR'S MESSAGE to YOU is that it serves YOU WELL AND RIGHT. R

FOR SALE—Model 25 Remington .32-20 Carbine; Model 25 Savage .22 repeater, 2-A Lyman sight, new; Winchester Model '04 .22 single shot, new; registered Alrdales to exchange for firearms. **WANT** Colt .32-20 S. A. 5 1/4 inch, blue; Colt .22 Automatic. Must be perfect inside. W. M. Gantt, Steppville, Ala. 293

SELL OR TRADE—H. Ferry B. L. flint lock bayonet rod and antique flask marked "Public Property," fine order, \$30.00. Or .30-30 Winchester Carbine or .45 Bissley 7 1/4. Must be first class shape. J. W. Bentley, 639 Greendale Ave., Edgewood, Penna. 296

"IF IT'S GUNS ASK ZINNER"—Your used gun taken in trade on new. Large stock on hand. No catalog. Write me what you want and what you want to trade in. Henry F. Zinner, Dealer in Guns, etc., Middleburgh, Schoharie Co., N. Y. U

FOR SALE—Colt .22 automatic, latest model, with holster. Almost new, perfect condition. First Money Order for \$26.00 takes it or will send C.O.D. R. A. Curran, 906 Galt Ave., Chicago, Illinois. 295

FOR SALE—300 Savage, lever, with Lyman and folding leaf sights. Case. Never been fired. Also new Springfield, Lyman sight, plain sporter stock. \$50.00 each. Dr. Richard Sutton, Kansas City, Mo. 298

TO EXCHANGE—45-60 Model 1876 "Centennial" Winchester in fair shape. **WANT**—Model 1873 .44-40 or Model 1876 .40-60 or .45-75 or any of the Model 1886 calibers. Box 31, THE AMERICAN RIFLEMAN. 369

WANTED—Ideal No. 2 Bullet Lubricating Press, also the following ideal bullet molds: 456191, 454190, 456123, 42498, 42499, 457129. State exact condition and price. Box 18, THE AMERICAN RIFLEMAN. 370

FOR SALE—New guns at discount to members N. R. A. Also number of used guns, priced right. No list, say what you want. Member N. R. A. Earl J. Russell, Monmouth, Illinois. V

WANTED—British .303, short model, as issued. No sporters. State price and condition. Price must be moderate. Walter C. Tobie, 3 Deering St., Portland, Maine. 294

FOR SALE—Complete reloading outfit for .45 Colt, in new condition. Kerr adjustable gun slings, brand new, 50 cents postpaid. S. J. Churchill, Biggsville, Illinois. 314

TRADE—Remington Pump, 12 ga. full. **WANT**—250 Savage, 54 Win., .22 Springfield, .22 or .45 Colt, 97 Winchester, old Winchester for repair. A. R. Bentley, Pendennis, Kan. 308

FOR SALE—Seth Thomas perfect balance, for perfect re-loading \$10.00. **WANTED**—Marlin No. 39, perfect condition. Herbert P. Robinson, Mayville, N. Y. 319

FOR SALE—Colts .45 Auto., \$27.00. Colt's Officers' Model Target, \$32.00. S. & W. Single Shot Pistol, \$22.00. All in factory grease, new and perfect. Bartow Lamar, 2035 Rutland St., Houston, Texas. 310

FOR SALE—45 cal. Savage Auto. Latest military model, special front sight, about factory new condition, accurate, satisfactory. List —\$35.00, sell for \$25.00. Henry Morris, 2633 E. 74th St., Chicago, Ill. 313

SHIFT WITH THE HOUSE OF SHIFF THE GUNMAN, N. Woodstock, New Hampshire. I need 500 fine used Colt's for cash or kind or Smith & Wesson except .45 Auto or 17s. I pay 90 per cent of what they bring. My list shows that. W

FOR SALE OR TRADE—One Winchester Musket, cal. .22 L.R. Used very little, checked stock, weight 9 1/4 pounds., a bargain at \$15.00 or will trade for Colt revolver cal. .32 or .38 Special, in same condition. Chas. Richmond, Jr., 10 Williams St., Bradford, Pa. 315

FOR SALE OR EXCHANGE—Contessa-Nel-let Vest Pocket camera. F. 6.8 Anstigmat lens, film pack adapter, three metal plate holders, focusing hood. This is a high grade outfit, practically new. **WANT**—22 Savage Sporter. F. E. Schrader, Wellsboro, Penn. 318

FOR SALE—Parker 12 28-inch Damascus barrel, R. Imp. cylinder. L. Full. Made D. H. stock, finely figured, 14 x 1 1/4 x 2 1/4, skeleton butt, new perfect condition, \$80.00. Bargain, must turn into money. Shipped C. O. D. for \$5.00. Also Colt Auto, .22, brand new. \$20.00. E. S. Hull, Arkport, N. Y. 316

SHIFT WITH THE HOUSE OF SHIFF THE GUNMAN, N. Woodstock, New Hampshire. The last price list for 1925 will be out in a few weeks. Our stock is very complete and summer prices hold until October first. We are stealing second base from the fanatics. If you can read and FIGHT you will get your moneys worth if you care to ship your stamp. T

FOR SALE—Model 95 Winchester .30-06 Lyman rear sight and double leaf. Sheard gold front sight, 5 boxes 180 grain B. P. Springfield H. S. with saddle sheath, \$55.00. Two Colt's New Service with left and right hand holsters and cartridge belts, \$56.00. Marlin 22 repeater, \$25.00. Texas stock saddle, new, \$95.00. Sell for \$75.00. All equipment in excellent condition, will send C. O. D. C. J. Ohle, 1845 Howe St., Chicago, Illinois. 307

FOR SALE—Winchester 95-40-72 front Marble Rev., Ivory and gold, 26 inches. Ideal double Adj. No. 3 complete, all above factory grease. Case, 20 factory shells, 50 new cases, \$45.50 or trade for Winchester 1886 Carbine take down 45-70. Trade—Krag Carbine as issued oil stock, for Winchester 1892 Carbine .41-40. **WANT**—S. & W. pearl stocks monograms for .38 top brake. What have you? All letters answered. Roy Bendure, Box 4084, Station A. Kansas City, Mo. 312

FOR SALE—Winchester 1892, 44-40 Carbine, brand new. Krag Carbine, new, with leather sling. Springfield .45-70 Carbine, good, used condition. Muzzle-loading target rifle, double trigger, good condition with bullet molds, etc. Stevens' Hunters Pet. 22, in crank condition. Colt's Pocket Positive .32, good as new. Sharps .30 four bore pistol, good. Wheeler, over and under, .22 and .32, rare. 4x5 Premo Camera with Zeiss Tessar lens, carrying case and complete outfit. All the above articles reasonably priced, and will accept trades on any except Winchester Carbine or Camera outfit. **WANT**—Winchester 30-30 Carbine, Stevens New Model Pocket rifle. 22. J. J. Marshall, 33 Park Place, Lockport, N. Y. 356

FOR SALE—Savage Sporter .25-20, fitted with Lyman Receiver Sight, gold bead front, extra magazine, Canvas, bore 100 Rem. Hi-Speed Cartridges. Gun in factory condition, \$25.00. 200 170 grain 30-30 Lubaloy \$1.00. Win. 30-30 170 grain, the lot, \$2.25. One Savage Reloading tool, 30-30, fine, \$1.50. One 30-30 shell resizing die, \$1.25. One .32 Rem. Rimless resizing die, \$1.00. One .32 Rem. Rimless bullet Mold No. 321317, \$1.00. Set dies 321317 for Ideal Pump, \$1.00. One Double Adj. Chamber .32 Rem. Rimless 50 cents. Percy J. Bowker, Wentworth Location, New Hampshire 328

FOR SALE—375 Hoffman, hand made \$300 grade full Lyman sights with 24-inch barrel both rifle and stock absolutely perfect inside and out, complete with Hueter Bros. reloading tools, 500 bullets, 150 new cases, 150 rounds loaded ammunition. First check for \$200.00 takes the outfit. K. A. Martin, Box 1617, Pittsburgh, Pa. 321

FOR SALE OR TRADE—Two Bond Double Cavity Molds. One .35 Colt, casts 1-160 and 1-45 grain bullet. One .250 Savage, casts 2-61 grain bullet. \$2.00 each. One set handles, \$1.00. One telescope, will spot .22 bullets at 75 yards, \$3.50. One .22 caliber Maxim Silencer, \$3.00. **WANT**—Colt .25 Automatic or .22 Revolver. E. A. Craven, R. A. Box 224, Selma, Calif. 527

SELL—Fox "A" grade, 12 ga. 28 inches, 7 lbs., \$52.00. Springfield .30 Sporter, 1922 pistol grip stock, \$40.00. Remington Auto. 12 ga. 28 inch barrel. All three brand new. 1thaca 10 ga., 30 inch bbls., No. 1 1/2 gauge, twist, \$30.00. Henry F. Zinner, Middleburgh, N. Y. 333

FOR SALE—W. W. Greener gun. Pre-war make. 12 gauge, 7 1/2 lbs. Pigeon grade quality non-ejector. A beautiful cross bolt gun of high quality, not much used, \$250.00. Fine English make square leather case. J. E. Murray, 1775 Radnor Rd., Cleveland Heights, O. 354

FOR SALE OR TRADE—250-3000 Savage 1920 bolt, Lyman 54 rear, Sheard gold front. Excellent condition, \$29.00. Bond tool and mold for above, factory condition, half price. Trade rifle for Smith 3-inch shotgun in equal condition. Glenn A. Avery, Alexandria, S. Dak. 365

FOR SALE—30 U. S. A. caliber Hoffman \$200.00 grade hand made stock and 24 inch barrel by Hoffman Arms Company on Springfield action, with Lyman sights rifle perfect inside and out, first check for \$125.00. K. A. Martin, Box 1617, Pittsburgh, Pa. 322

FOR SALE—1903 .30-06 Springfield Sporter No. 125181 with star gauge record and target, Lyman 48 receiver sight, Sheard gold bead front sight, leather sling, with solid sole leather hand sewed case, \$70.00. H. M. Bowman, 1361 Jeffers St., Pittsburgh, Pa. 362

WANTED—One Single Action Colt, barrel and cylinder immaterial. Action must be perfect. **SELL**—One cal. .30 Ideal bullet Mold No. 308291, also mold for soft tip for the above, perfect, \$2.50 for the two. Ivan Kirkman, Benkelman, Nebraska. 329

FOR SALE—250-3000 Bolt Action Savage, gold front, Marble rear. Excellent condition, fired about forty times, \$39.00 cost \$60.50. 25 Colt Auto. very good \$10.00. T. A. Ticken, Box 314, Spirit Lake, Idaho. 363

FOR SALE—256 Newton Takedown, like new, \$42.50. .25 Rem. Auto., good as new, \$20.00. New 6.5 mm. Mauser, with Ajax Scope, \$50.00. G. E. Wheeler, 403 15th Ave., No. 3, Seattle, Wash. 324

FOR SALE—Smith & Wesson .22 cal. Perfected Model Pistol. Olympic barrel. New condition. Price \$20.00. Edward Belser, 152 Bainbridge St., Elizabethtown, Pa. 311

TRADE—90 volts small radio wet B batteries, new, and W. D. 12 tube, used, for 30-06 wartime cartridges. E. C. Lenz, 1632 Pontiac Ave., Cleveland, Ohio. 320

FOR SALE—Savage .22 H. P. \$25.00. 25-35 Win. 94 Model, \$25.00. 30 Rem. Carbine, No. 14-R, \$35.00. All in excellent condition. C. C. Townsend, Greeley, Colorado. 330

FOR SALE—Win. 52. Will do one-quarter inch groups 25 yards, \$30.00. Springfield .22 caliber, hardwood case, \$73.00. 5-A Scope, perfect, \$22.00. E. F. Shearer, Renovo, Pa. 325

TRADE—Stevens Ideal S. S. rifle, 25 R. F., inside good, outside fair. **WANT** S. A. Colt Army 5 1/2 inch .32-20 good, or 32 Colt Pocket Auto. Clarence Baldwin, Akron, Iowa. 326

FOR SALE—Bush Ultralux 8-x Binocular, cost \$65.00, sell \$25.00, fine condition. E. F. Ballou, Box 464, Glenrock, Wyoming. 317

WANTED—New .22 caliber, Springfield Rifle, Model 1922, M. 1, the latest improved. Must be in perfect condition. State lowest cash price, full description and equipment. E. J. Hoffelz, Box 544, Austin, Texas. 343

FOR SALE—Winchester Rifle, Model '95, cal. .30-40. Lyman sights. Inside perfect. Outside good, with 100 rounds ammunition, \$30.00. D. S. Marshall, Perry, Ga. 337

RIFLETELESCOPES, 4x, Kahles, \$18.00, 2 1/4 x, \$13.00. Mountings for all foreign made rifle telescopes, crosshairs, lenses, best quality. F. Decker, 814 George Street, Chicago, Ill. 339

FOR SALE—Remington .35 Model 14 peep rear and ivory bead front sights, excellent throughout barrel, spotters, \$29.00. H. D. Ailyn, 10 Commonwealth Ave., Springfield, Mass. 331

FOR SALE—Model 1892 Winchester, taken down, cal. .25-20, perfect. **WANTED**—New Service Colt, cal. .45, must be perfect inside. Dr. Urling C. Ruckstuhl, 1233 Missouri Bldg., St. Louis, Mo. 352

WANT TO TRADE—One .45 cal., new service Colt revolver. Has 4 1/2 inch barrel, ring in butt, and very small piece chipped out of corner on handle. Otherwise perfect. **WANT**—30 cal. Springfield. Must be in good condition. Charles R. Smith, Dahart, Texas. 342

FOR SALE—Ballard Double Set Trigger .22 cal. Match Rifle, with Winchester Scope complete and Peep Rear and Globe front sights, \$66.00. Colt .45 cal. S. A. Revolver in excellent condition, \$15.00. L. H. Lapinske, 201 Seymour St., Wausau, Wisconsin. 340

FOR SALE—Cheekering Tools \$5.00 a set. Three double row spacers, fine, medium, coarse. One double end trigger, bent Swiss file for finishing, flexible straight edge, instructions as to use of tools. Guaranteed. Purchase price will be refunded on any set if not satisfactory and returned to me. R. J. Snyder, 104 Union St., Union, N. Y. 334

SALE OF LARGE ASSORTMENT RELOADING TOOLS and Molds of various calibers .25-50. Obsolete rim and centerfire cartridges, Civil War Cartridges, different makes and caliber rifles and shotguns and revolvers, domestic and foreign. State in first letter what you desire. Satisfaction and prices guaranteed. John A. Polwartshny, 232 Federal St., Portland, Me. 341

FOR SALE—Union Hill Ballard Schuetzen rifle, cal. .38-55. Rifle is in excellent condition and will shoot 1 1/2 inch groups at 100 yards. Lyman sights, double set triggers, full leather case, 200 empties, 300 metal cased bullets, some tools. Price \$40.00 or trade for Springfield Sporter. Will ship C. O. D., purchase subject to your inspection. Grover Johnson, 658 Beckwith Ave., Missoula, Mont. 336

TRADE—33 Hi-Power Winchester taken down, good condition. .32-40 Stevens Match Rifle with Target sights. Perfect condition inside and out. 30-30 Rem. Automatic, good as new. One Remington Double, 12 ga., extra fine. One .30 cal. Colt's cap and ball pistol, 3 muzzle loading rifles, one good, others relics. One Stevens offhand .22, 6 inch barrel. One 5x7 Premo camera and outfit, 2 lenses, one cost \$125.00. One Push-Pull Radio Amplifier. One Cataract fixed focus scope. **WANT**—Model 52 Winchester, Ballard .22, Colt's Auto, Pistol .22, 45-70 reloading tools with mold, 20 gauge double. **TRADE**—I have another Springfield 30-1403 as issued, want .22 Ballard, W. McGowan, 1905 Hillside Ave., Springfield, Ohio. 338

FOR SALE—One new .405 Win. Model '95, solid frame, fitted Lyman gold bead front and No. 41 peep sight stock fitted with Jotam 2-1/2 inch recoil pad, increasing stock 14 inches, 300 rounds Western lubaloy soft cartridges, price \$65.00 cash. One Krag Carbine, perfect condition. 23 inch barrel, Springfield front and Lyman 34 Receiver Sight, several hundred cartridges, lot of empties, also Bond D. C. Mold. Price \$25.00 cash. One brand new .45 S. W. 1917 Model, price \$25.00 cash. One New Service Colt's 45 5 1/2 inch barrel, new condition. Will trade for a new Model S. A. A. 7 1/2 inch barrel only. Must be in new condition or will sell. Price \$25.00 cash. Any of the above guns sent C. O. D. subject to examination on receipt of \$5.00. Harry Davidson, Box 76, New Franklin, Mo. 335

FOR SALE—Special Niedner Winchester single shot, close chamber, for .32-20 shell necked to .22 cal. 24 in. barrel, heavy and tapered for Springfield front sight mounted on it. Super accurate, 2800 ft. sec., flat trajectory. Perfect wood-chuck and vermin rifle. Excellent on coyote. Barrel brand new, gun like new. Special Win. forearm and shotgun stock. Scope blocks. Niedner perfect loading tools, 75 shells, primers, 50 grains copper bullets, Du Pont No. 50 powder. Loads nicely with Ideal or Bond measure. Cost me \$78.00, sell for \$60.00. Selling reason, need school money. Corona typewriter, used but good as new, case, only \$30.00. Parker celluloid pistol rod, .32 to .45 cal. Handle for swivel. Like new, only \$1.00. A. G. Gray, General Delivery, Rockford, Illinois. 347

WANTED—Old Gun Catalogs. Gun Books. Cartridges .50-115 Ballard. .50-90 Sharps and other old timers. **FOR SALE**—Books: Sporting Expeditions in Many Lands 1864, \$1.50. Adventures on the Great Hunting Grounds of the World, 1868, \$1.25. Shooting by Dougal, London 1875, \$2.25. Remington Rolling Block Carbine 44-40 \$5.00. Marlin Model 1881, good inside, set triggers, \$8.00. Winchester Model 1873, little out of order, \$3.50. Winchester Mold 1876, butt stock and action, \$2.00. Cartridges .50-70, solid head shells, modern primers, \$3.00 per 100. .22 cal. extra long, center fire, \$2.50 per 100. .44 long Ballard. Fred Wainwright, Grayling, Michigan. 353

SELL—52 Winchester, new, stock beautifully remodeled with the De Luxe checking, \$45.00. Stevens 414, aperture front, strap fine, \$17.50. Savage 22 Sporter. Fine \$15.00. Winchester 351 Auto., new, slightly shopworn, extra clip, \$45.00. .50-303 British cartridges, \$1.50. Fine 12 ga. belt with dozen shells, \$2.00. New cot bed, \$3.25. Teepee tent 11 ft. dia., fine, \$20.00. Maine knapsack, \$10.00. Philip Plaistrage, Plymouth, Mass. 352

FOR SALE—\$500.00 hand built by Hoffman De Luxe sporting rifle cal. .30-06. Mauser action superbly carved and engraved and inlaid with gold in relief. Rifle is absolutely new as delivered by maker cancelled Alaska hunt reason for sacrificing at \$285.00. Will ship subject to examination upon receipt of \$10.00, balance C. O. D. Capt. Nardo Mendoza, 1005 N. Oxford Ave., Los Angeles, Cal. 357

FOR SALE—Specially selected match Springfield, oil finished sporting stock, pistol grip and cheek piece made by Moran, beautifully checked, 1 1/2 at comb, 2 1/2 at heel, 1 1/2 trigger to butt plate, Lyman 43 rear regulation front with sight cover, Kerr sling and swivels, like new and in gun crank condition, only fired to set sights, \$70.00 cash. Geo. Gorton, Cement, Oklahoma. 351

FOR SALE ONLY—1 Imported fancy engraved target rifle, Audt System, cal. .25-35 Win., Set Triggers, very accurate, new, \$125.00, and one fine imported 3 barrel gun, 12 ga. and 25-35 W. 28 inch barrels, ejector, folding peep sight, fancy engravings, very accurate, new, \$275.00. Both bargains. R. Nichege, 626 Charles Bldg., Denver, Colorado. 354

FOR SALE—Winchester Rifles, Model 94, .32-40, Oct. good, \$16.00. Model '95, .30-40, good, \$20.00. Model 86, Oct. Factory condition except bore pitted, 40-82, \$18.00. Stevens Target, .32-40, special target sights, smokeless steel, set trigger, new condition, \$30.00. W. H. Lennette, Dickinson, N. Dak. 355

FOR SALE—Ballard .22 short set, \$25.00. Heavy muzzle loading Pope barrel, 32-40. Ballard, \$15.00. Pope barrel and deccaper, 32-40, \$4.00. Ballard barrel 38-55, fancy fore-end, \$6.00. Two 25-20 reloaders, one 25-20 mold, all Win., \$1.50. 32-40 Reloader, \$1.50. 32-40 Mold \$1.50. 32-40 Stevens rifle No. 442, \$15.00. Earnest House, Hanover, Conn. 344

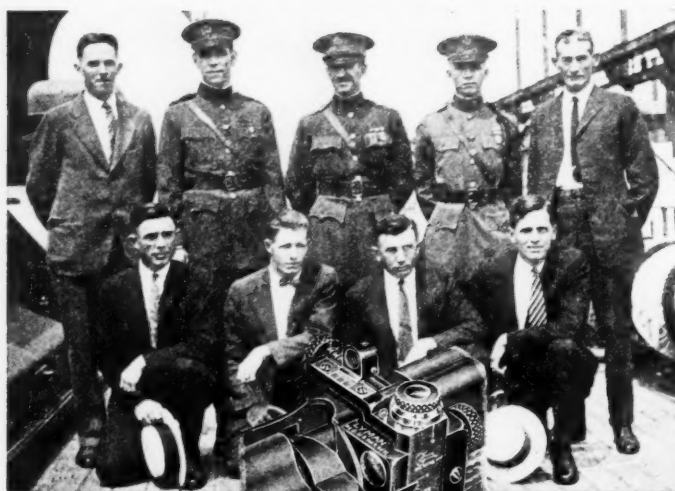
FOR SALE—One Stevens Ideal .25-20 C. F. Rifle, open sporting and peep globe sights, with interchangeable .25-10 C. F. tapered barrel, with open sporting sights, extra breechblock and ejector. Perfect condition, \$25.00. K. Niederrstadt, 161 11th st., Hoboken, N. J. 345

FOR SALE—One 73 Model Winchester .44-40 cal. in new condition. Equipped with Marbles rear peep sight, Marbles ivory bead front sight. Set trigger and special shotgun type stock. This rifle is a dandy. S. J. Churchill, Biggsville, Illinois. 346

FOR SALE—Savage 1920, bolt, 250-3000, fine condition, Lyman sights, Ideal tools and cartridges, \$25.00. Also Reising .22 cal., auto pistol Heiser holster, bargain, \$20.00. A. W. Anderson, 79 Seventh Ave., New York City. 350

FOR SALE OR TRADE—Springfield Newton .30-06, fine as there is made. A special made gun. What have you? J. A. B. Jones, Box 278, Safford, Arizona. 348

TRADE—1 Remington .22 special in gun crank condition for good double barrel 10 ga. M. Soley, Eldridge, California. 360



LYMAN NO. 48 MICROMETER RECEIVER SIGHT

The type of sight used by American, Olympic and Pan American Teams. The most accurate type of metal sight made.

The 1925 American Rifle Team

Lyman Target Front Sight No. 17



Showing Aperture and Large Hood



Showing Reversible Aperture and Post, approximately actual size.

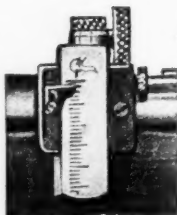


Showing Post.

The No. 17 Front Sight shown here is the type of the Front Sight used by successful American International and Olympic Teams. Has large hood and reversible Aperture and Post. Aperture designed to surround bull's-eye, with plenty of metal for clear definition. Relieves eye strain and makes possible quicker shooting with better results. Diameter of hole in aperture 3-32 in. (.093 in.) suitable for official targets for outdoor and indoor ranges.

No. 48 for Winchester 54

This is the sight recommended by prominent riflemen for the new Winchester Model 54 Bolt Action Rifles. .270 and .30 '06 Gov't calibers (same sight fits both guns). It is an adaptation of the regular Lyman No. 48



Micrometer Receiver Sight. It has "click" adjustments for elevation and windage, each "click" changing point of impact horizontally or laterally approximately $\frac{1}{2}$ in. at 100 yards.

Lyman No. 48 Micrometer Receiver Sights are adapted to the following rifles:

Springfield 1903; Winchester 54; Krag; Ross Model 10, caliber .280; Remington Model 30; Lee Enfield; B. S. A. .22 caliber sporting; and practically all rifles with Martini or Mauser Actions.

The Greatest Shots In the World Endorse LYMAN SIGHTS

For five years, Lyman Sights have been standard equipment on the rifles of American International Rifle Teams. For four successive years the American Teams have come home victorious, and this year's Team made a marvelous showing against tremendous odds.

Lyman sights were used by the three highest teams in the Olympic Matches in 1924 and by the winning Pan-American Team last winter.

The Right Principle of Rear Aperture Sighting

Lyman Sights *better your aim* because the Lyman Principle of Rear Aperture Sighting is the *correct* principle. The rear sight is set close to the eye, giving a long sight base. This decreases possible variation to a minimum. It also enables the shooter to all but ignore the rear sight when aiming and concentrate his attention on holding the front sight on the target. This relieves eye strain, and permits of greater accuracy.

Your chances of winning a high place in the matches at Camp Perry and at Havana will be greatly increased if you equip your rifle with Lyman Sights.

Long Practice Not Necessary

Long practice is not necessary to accustom yourself to Lyman Sights. A few rounds and you will be quite at home with them.

Ask P. J. O'Hare

You will find him at Camp Perry as usual representing us. He will be glad to take care of your Lyman Sight requirements.

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